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IDENTIFIERS	*Alaska (Kodiak Island); Circumference; Consumer Mathematics; Perimeter (Geometry); *Secondary Training for Alaskan Rural Students; Word Problems

ABSTRACT

STARS (Secondary Training for Alaskan Rural Students) materials resulted from extensive rewriting of the Vocational Adult Secondary Training (VAST) materials produced by the British Columbia Department of Education, after those materials had been used with the 9th and 10th graders on Kodiak Island. Revision was done by teachers who had been using the materials and by an experienced Alaskan Curriculum materials consultant, and was done specifically for rural Alaskan students. The "Mathematics" student workbook is comprised of 11 units, including units on: whole numbers; fractions; ratio and proportion; decimals; percent; consumer math; measurement; perimeter; area and volume; statistics; geometry; and integer and rationals. Six of the units conclude with problem solving or word problems. Puzzles and problems are based on Alaskan situations. Answer keys are supplied for the exercises. The units are designed so that the average 9th grader should usually complete 1/2 of the material in 1 year, and 10th graders should complete all of the material. (BRR)

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ED224632

STARS

(SECONDARY TRAINING FOR ALASKAN RURAL STUDENTS)

MATHEMATICS

DRAFT COPY

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AUGUST, 1977

KODIAK ISLAND BOROUGH SCHOOL DISTRICT

PUBLISHED AND PRINTED WITH BLOCK GRANT FUNDS MADE AVAILABLE BY THE ALASKA STATE DEPARTMENT OF EDUCATION.

RC 013686

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b) ADDITION & SUBSTRACTION
c) MULTIPLICATION & DIVISION
d) FACTORING

ANSWER KEY

FOREWORD

In 1975, the Kodiak Island Brough School District purchased and used the VOCATIONAL ADULT SECONDARY TRAINING (VAST) materials from the British Columbia Department of Education. In 1976, these materials were also used with the 9th and 10th grade students on Kodiak Island. An extensive evaluation of the materials was done which concluded that certain parts and sections of these materials needed revision to fit rural Alaskan students. Therefore, a team of writers was put together to rewrite these materials into the form in this book.

The writing team consisted of teachers who had been using the materials and an experienced Alaskan curriculum materials consultant. The team worked for over two weeks and revised the materials extensively. However, they concluded that this 1977 copy should be re-evaluated during the 1977-78 school year and revised again in the summer of 1978. Therefore this copy is labeled DRAFT COPY.

Considerations & Recommendations

1) These materials have been rewritten and revised specifically for rural Alaskan students.

2) This is a DRAFT COPY which will be revised again 1978.

3) These materials were written for 9th and 10th grade students, but can be used with other groups where appropriate.

4) Teachers should note that these materials:

- (a) Require individualization and accompanying scheduling, classroom organization, and teaching style considerations;
- (b) Require a student to take more responsibility for his/her own education and care must be taken to train teachers and students how to use them;
- (c) Have been used with 8th grade students, but only about 50% have developed the maturity to work with them consistantly and effectively;

(d) Are designed so that the average 9th grader should usually complete 1/2 of the materials in one year, and 10th graders all of the materials (except for Science, which is a shorter unit);

(e) Have errors, faults, and imperfections, but are the best method the rural Alaskan teachers who have used them, feel there is available.

5) More complete information on these materials and the program designed and implemented to use them is available from the Kodiak Island Borough School District. (See 'Acknowledgements')

ACKNOWLEDGEMENTS

This book contains a great deal of the material developed in the *VOCATIONAL ADULT SECONDARY TRAINING (VAST)* materials distributed by the British Columbia Department of Education. Without the hard work of the British Columbia teachers who put the VAST materials together and Karl Osmers' assistance, the *STARS* materials would not have been possible. We would like to thank the British Columbia Department of Education for graciously letting us use their materials in our writing of *STARS*.

We would also like to thank the Alaska State Department of Education for providing us with the assistance and financial resources we needed to implement our *SMALL RURAL SCHOOLS PROJECT* and produce these materials.

This book would really not have been possible though, without the help of some of the finest teachers in Alaska who spent so many hours writing this material:

AUTHORS:

COMMUNICATIONS:	ELAINE GRIFFIN KATHLEEN OPEL
MATH:	NED GRIFFIN ROBERT OSTROM
SCIENCE:	GARY SHEPPARD BILL COSTELLO
OVERALL CONSULTANT:	LUCILLE FREY

I truly appreciate the opportunity to have worked with such a fine group of dedicated, creative, and knowledgeable professionals. Additionally, the secretaries and layout artist, Virginia Jerrems, also proved invaluable.

Finally, another group of people who really deserves acknowledgement as well:

The Kodiak Island School Board, the Administration, and in particular, Superintendent Robert C. Greene. Without their planning, assistance, direction, knowledge, and support, none of this would have been possible from the very beginning.

Sincerely,

MIKE JOHNSON
Rural Schools Project Coordinator

1. WHOLE NUMBERS

TOPICS IN THIS UNIT:

a) READING, WRITING & ROUNDING-OFF

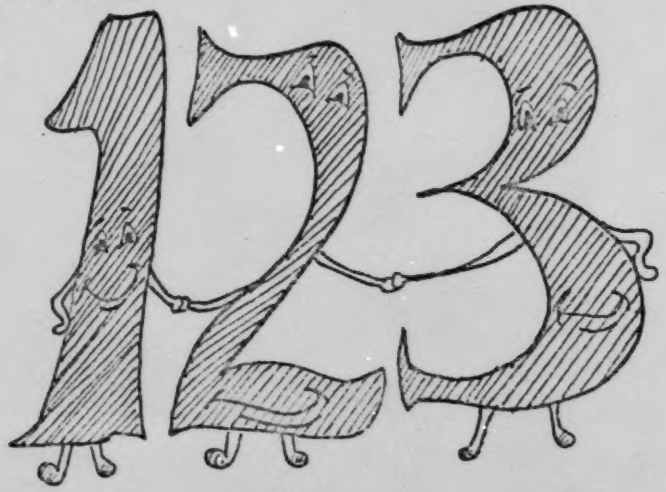
b) ADDITION

c) SUBTRACTION

d) MULTIPLICATION

e) DIVISION

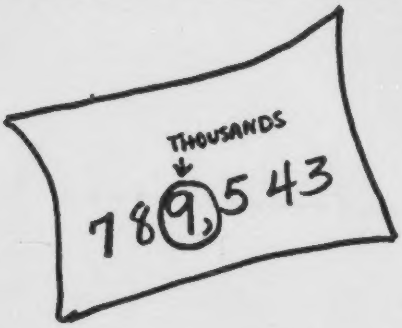
f) WORD PROBLEMS

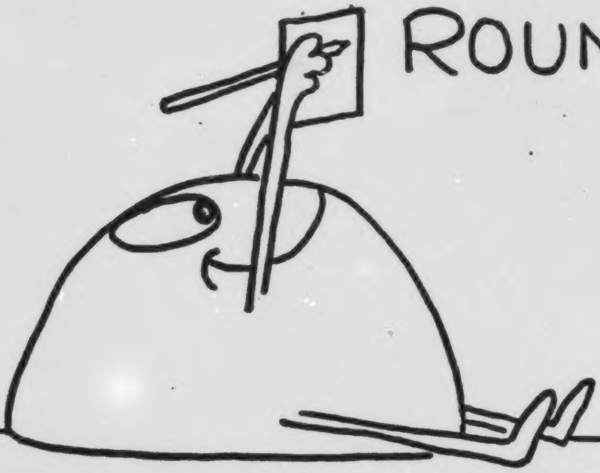


UNIT I.

WHOLE NUMBERS

A. READING, WRITING and ROUNDING OFF





OBJECTIVES

1. Count up to 100 and state or write the number counted in words or symbols.
2. Identify the place value of a digit or numeral to 100 million.
3. Read numbers to 100 million.
4. Write numbers to 100 million after reading the word name of the number.
5. Arrange a set of numbers in a given order.
6. Round off numbers to the nearest ten, hundred, thousand, or ten thousand.

OBJ.	SOURCE	WORK TO DO
1,2,3,4	Math, A Basic Course	Read p. 1 & 2, do p. 3
6	Math, A Basic Course	Read p. 6, do p. 6 & 7

RAPID REVIEW

1. Write these numbers in digits:

   a. three thousand four hundred fifty-six
   b. five hundred thousand sixty

2. Name the place values in the following number:

   87,465,109

REMEMBER

WHEN ROUNDING OFF A NUMBER

1. Find the unit place to which the number is to be rounded.
2. If the first digit to the right is 5 or more increase the required number by one.
3. Write a zero in place of each figure to the right of the required number.

3. Round the following numbers to the nearest ten.

   a. 65 b. 72 c. 9,745 d. 876,592

4. Round the following numbers to the nearest thousand.

   a. 1,001 b. 97,853 c. 835,641 d. 1,111,531

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

WHAT DO YOU WANT TO BE?

"Doctor, lawyer, merchant, chief.....?"

If you could be anything you'd rather be, what careers would you choose in life? (Most people change jobs about 7 times, so don't limit your choices to one thing.)

On a scale of 1 to 10, with 10 being high choice, rate these jobs according to how attractive they are to you. (Put an X.)

	1	2	3	4	5	6	7	8	9	10
FISHERMAN										
PILOT										
HOUSEKEEPER										
DOCTOR										
NURSE										
MERCHANT (Storekeeper)										
TEACHERS										

Pick your two (2) career choices. Find out how much mathematics each job requires. If there are people who practice these occupations in your village, interview them. Make up your questions in advance, such as:

"How many years of math did you take in school?"

"What kinds of math do you use the most?"

SELECTED CAREERS RELATED TO MATHEMATICS

Levels	Service	Business Clerical and Sales	Science and Technology	Outdoor	General Cultural	Arts and Entertainment
I Bachelor's Degree or Above	-Corp Statement Analyst -Reorganization Advisor -Tax Expert -Marketing Expert -Psychometrist	-Investment Advisor -Banker -System Analyst -Computer Programmer -Econometrician -Bursar -Accountant, Pub. -Statistician -Actuary	-Astronomer -Physicist -Mathematician -Engineer, Electrical, etc. -Research	-Navigator -Civil Engineer	-Economist -Teacher, Mathematics -Sociometrician	-Architect
II H.S. Plus Technical	-Tax Collector	-Collection Mgr. -Appraiser -Auditor -Bank Examiner -Office Manager -Sales Manager	-Contractor -Machine Designer -Radio Operator -Draftsman -Tool Designer -Optometrist -Lab Assistant	-Surveyor		-Motion Pictures (Audio)
III H.S. Graduate	-Assessor -Actuarial Assistant	-Statistical Clerk -Cashier -Bookkeeper -Ticket Agent -Broker's Clerk -Cost Clerk -Budget Clerk -Secretary to Accountant -Teller -Billing Clerk	-Tool Maker			
IV Less Than H.S. Graduate		-Card Punch Oper. -Computing Mach. Operator -Sales Clerk				

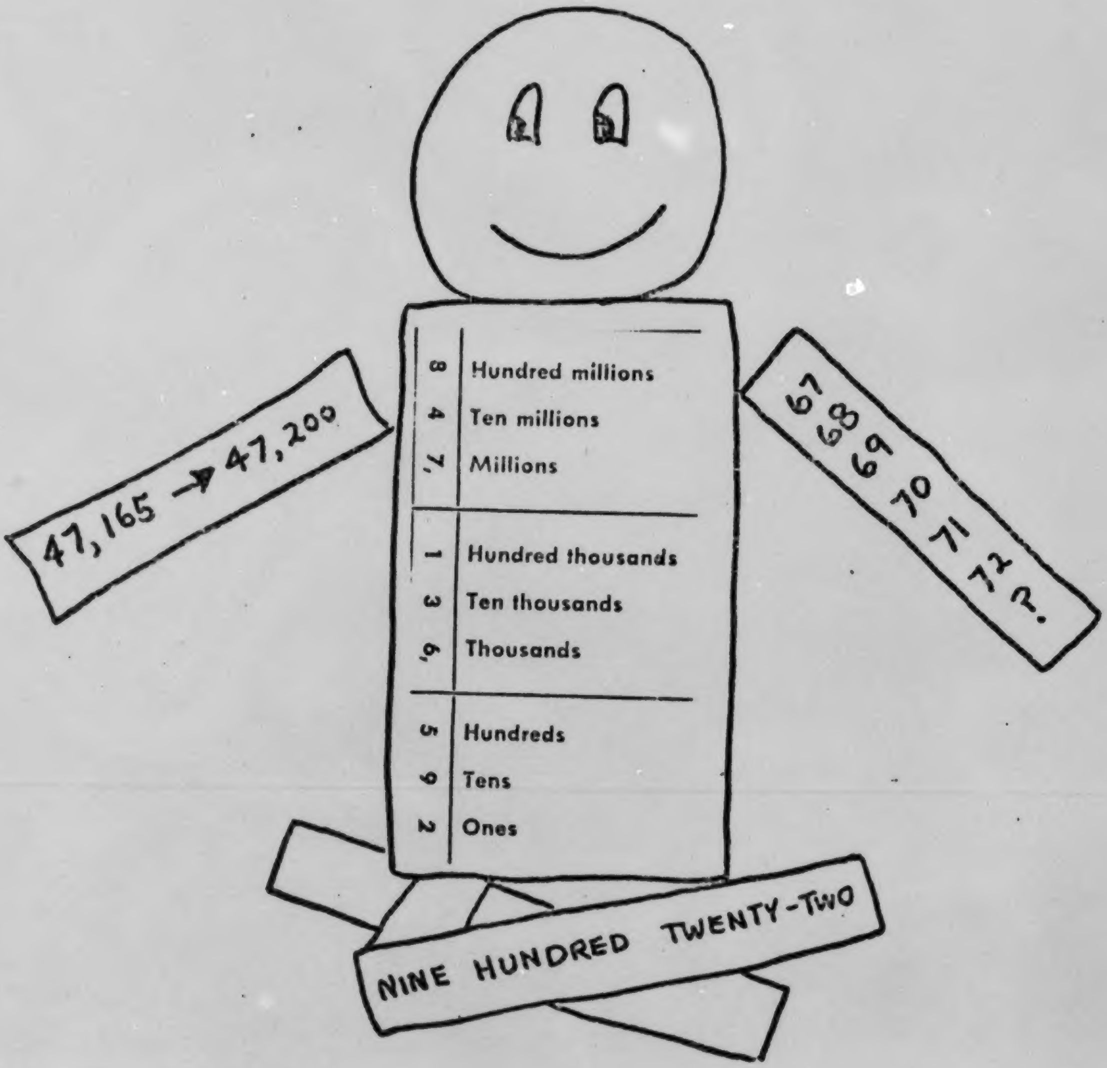
PICK 5 OR MORE OCCUPATIONS FROM THIS CHART that are described in the Occupational Outlook Handbook or other career education material you can find.

DRAW A POSTER FOR EACH, depicting something that person does. Also include information on how much math training is necessary for the job.

You may include careers of people you interview, or ones you included on your Career Ranking Sheet, "What Do You Want To Do?"

EXTRA PRACTICE

OBJ	SOURCE	WORK TO DO
1,2,3,4,5	Refresher Math	Read p. 19, do Green Test p. 20
6	Refresher Math	Read p. 22, do Green Test p. 22


47,165 → 47,200
8 Hundred millions
4 Ten millions
7, Millions
1 Hundred thousands
3 Ten thousands
6, Thousands
5 Hundreds
9 Tens
2 Ones
67 68 69 70 71 72 ?.
NINE HUNDRED TWENTY-TWO

PROGRESS CHECK A

UNIT I - WHOLE NUMBERS RESULT

TOPIC A - READING, WRITING & ROUNDING OFF CRITERIA 13/14

Marks

(1) 1. Count the letters in the box.

P L O K I M J U N H Y B G T R F V C D E W S X A

____

(5) 2. Write the place value of the "7" in the following numbers:

a. 74 ____________ d. 1,467,263 ________________

b. 167 ___________ e. 63,702 ___________________

c. 70,402 _______

(1) 3. Write "forty-three thousand, three hundred two" using digits.

____

(3) 4. Write the following numbers in words.

a. 461_______________________________________

b. 21____

c. 47,207____________________________________

(1) 5. Rewrite these numerals from smallest to largest.

4, 8940, 9840, 4890, _____, _____, _____, _____.

(3) 6. Round off 10,463 to the nearest:

a. ten ______________________________________

b. hundred __________________________________

c. thousand _________________________________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT I - WHOLE NUMBERS

TOPIC A - READING, WRITING & ROUNDING OFF

RESULT

CRITERIA 14/14

Marks

(1) 1. Count the letters in the box.

A F G L C L D F Y A X W D R V G Y N J ______

(5) 2. Write the place value of the 5 in the following numbers.

a. 5,041 _____

b. 4,205 _____

c. 6,521 _____

d. 500,000 _____

e. 15,476,123 _____

(1) 3. Write "four hundred three thousand, two hundred fifty-three" using digits.

____

(3) 4. Write the following numbers in words.

a. 263 ______________________________

b. 6,242 ______________________________

c. 15,460 ______________________________

(1) 5. Rewrite these numbers in order from smallest to largest.

9, 9890, 8989, 890 ____, ____, ____, ____

(3) 6. Round off the following numbers to the indicated values:

a. 4,763 (nearest ten) ____________________

b. 4,763 (nearest hundred) ____________________

c. 4,763 (nearest thousand) ____________________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

UNIT I.

WHOLE NUMBERS

B. ADDITION

OBJECTIVES:

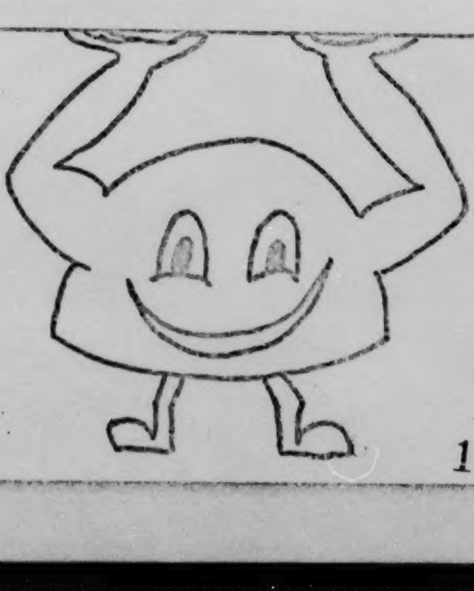
1. Perform addition such as:
   What is the total of 2 and 3?
   Find the sum of 2 and 3.
   Add 2 + 3.
   2 plus 3 is ____.

2. Write sentences using the symbols "+" and "=" correctly, such as:
   2 + 3 = 5

3. Add zero to any number.

4. Find the sum of large numbers including cases where carrying is needed.

5. Use addition in solving word problems.



OBJ.	SOURCE	WORK TO DO
1,2,3,4	Math, A Basic Course	Read p. 7 & 8, do p. 8 & 9; no word problems

RAPID REVIEW

REMEMBER

1. When adding a column of numbers, always start on the right.
2. Careless mistakes are sometimes made because the work was not "checked".

$$\begin{array}{rl} 532 & \text{addend} \\ +468 & \text{addend} \\ \hline 1000 & \text{sum} \end{array}$$

1. What is the total of 4 and 7?

2. Add 9 + 6.

3. Add the following:

   a. 9 + 0 = ___ b. 98 + 0 = ___ c. 1,967 + 0 = ___

4. Add the following columns of numbers:

   a. $\begin{array}{r} 9 \\ +9 \\ \hline \end{array}$ b. $\begin{array}{r} 6 \\ +7 \\ \hline \end{array}$ c. $\begin{array}{r} 8 \\ +6 \\ \hline \end{array}$ d. $\begin{array}{r} 28 \\ +21 \\ \hline \end{array}$ e. $\begin{array}{r} 224 \\ +\ 73 \\ \hline \end{array}$ f. $\begin{array}{r} 312 \\ +5324 \\ \hline \end{array}$

   g. $\begin{array}{r} 41321 \\ +612314 \\ \hline \end{array}$ h. $\begin{array}{r} 16 \\ 47 \\ +13 \\ \hline \end{array}$ i. $\begin{array}{r} 273 \\ 162 \\ 253 \\ +210 \\ \hline \end{array}$ j. $\begin{array}{r} 7067 \\ 8454 \\ 5312 \\ 2521 \\ +1214 \\ \hline \end{array}$ k. $\begin{array}{r} 212304 \\ 321456 \\ 214672 \\ 523214 \\ +314235 \\ \hline \end{array}$

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Learning to Compute	✓ Do p. 1-5
4	Learning to Compute	Do p. 8 & 9
1	Spectrum Yellow	Do p. 2
4	Spectrum Blue	Do p. 3

FOR FUN, try the Famous Alaskans Puzzle next page.

FAMOUS ALASKANS PUZZLE

This man left Kansas with a few cents in his pocket and came to Alaska. He earned money by boxing and by working in construction. He was appointed Secretary of Interior by President Nixon and was fired by him when they disagreed. He built several hotels in Alaska and became a millionaire.

1,660	198	1,199	2,135	278	220
206	99	231	1,622	278	1,199

Work the additional problems below. Find the name of this man, famous in Alaskan politics and business.

A.	B.	C.	D.	E.	F.
27	81	68	7	48	7
36	74	46	10	97	68
48	42	29	24	77	16
57	95	57	+137	+56	+52
+30	+63	+31			

G.	H.	I.	J.	K.	L.
28	64	41	48	283	624
32	48	22	382	904	109
17	9	16	409	418	324
+16	+85	+20	+184	+ 17	117
					+ 25

M.	N.	O.	P.	Q.	R.	S.
57	36	424	58	117	23	437
69	42	35	46	213	46	376
98	93	2	907	321	60	843
87	+10	635	+909	+505	57	+734
+74		+ 84			+34	

T.	U.	V.	W.	X.	Y.	Z.
561	74	67	216	119	731	734
731	92	66	621	191	123	637
+843	33	89	583	911	907	348
	+16	77	+240	+843	+641	+437
		+53				

PROGRESS CHECK A

UNIT I - WHOLE NUMBERS RESULT

TOPIC B - ADDITION CRITERIA 15/15

Marks

(1) 1. Write "two plus three equals five" with symbols.

____

(3) 2. a. What is the total of 4 and 5? ____________________

b. What is the sum of 4 and 5? ____________________

c. Four plus five is: ____________________

(6) 3. Perform these operations:

a. 2 + 5 = ______________ d. 2 + 0 = ______________

b. 17 + 2 = ______________ e. 7 + 3 = ______________

c. 19 + 3 = ______________ f. 3 + 7 = ______________

(5) 4. Find the sum in each of these:

a.	42	b.	27	c.	336	d.	10600	e.	267+3+49= __________
	8		310		49		2510		

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT I - WHOLE NUMBERS　　　　　　　RESULT

TOPIC B - ADDITION　　　　　　　CRITERIA 14/15

Marks

(1) 1. Write "five plus three is eight" in symbols.

____

(3) 2. a. What is the sum of 3 and 8? ____________________

b. The total of 3 and 8 is? ____________________

c. Eight plus three is? ____________________

(6) 3. Perform these operations:

a. 6 + 3 = ____________　　d. 4 + 0 = ____________

b. 3 + 6 = ____________　　e. 203 + 1 = ____________

c. 9 + 4 = ____________　　f. 2 + 4 + 5 = ____________

(5) 4. Add the following:

a. $\begin{array}{r} 12 \\ \underline{8} \end{array}$　b. $\begin{array}{r} 31 \\ \underline{269} \end{array}$　c. $\begin{array}{r} 5042 \\ \underline{163} \end{array}$　d. $\begin{array}{r} 427 \\ \underline{184} \end{array}$　e. 27+3+242=

____

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

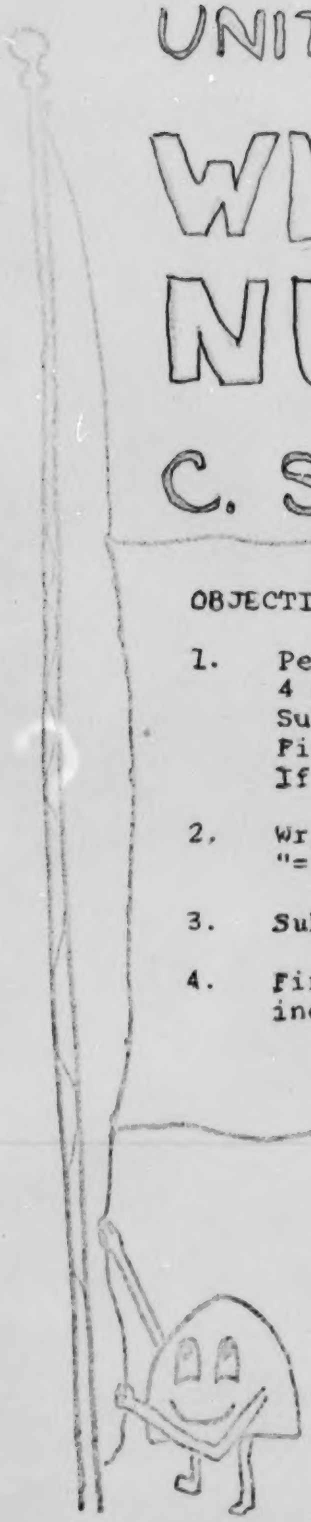
UNIT I.

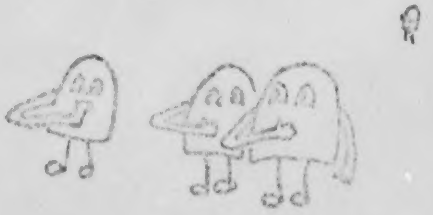
WHOLE NUMBERS

C. SUBTRACTION

OBJECTIVES:

1. Perform subtraction given instructions such as:
   4 minus _?_ is 3.
   Subtract 1 from 4.
   Find the difference between 4 and 1.
   If you had 4 and gave 1 away, you have _?_ left?
2. Write a sentence using the symbols "-" and "=" correctly.
3. Subtract zero from any number.
4. Find the difference between two large numbers including cases where borrowing is required.





OBJ.	SOURCE	WORK TO DO
1,2	Math, A Basic Course	Read p. 10, do p. 11; to word problems

RAPID REVIEW

REMEMBER

1. When subtracting columns of numbers, always start on the right.
2. In checking subtraction add the remainder and the subtrahend.

$$\begin{array}{rl} 1465 & \text{minuend} \\ \underline{-895} & \text{subtrahend} \\ 574 & \text{remainder} \end{array}$$

1. Find the difference between 4 and 1.

2. If you had 18 and gave 9 away, you have ____ left.

3. Subtract the following numbers:

   a. 9 - 0 = ___ b. 98 - 0 = ____ c. 9,874 - 0 = ____

4. Subtract the following columns of numbers:

   a. $\begin{array}{r}14\\ \underline{-7}\end{array}$ b. $\begin{array}{r}17\\ \underline{-9}\end{array}$ c. $\begin{array}{r}15\\ \underline{-7}\end{array}$ d. $\begin{array}{r}37\\ \underline{-6}\end{array}$ e. $\begin{array}{r}327\\ \underline{-16}\end{array}$ f. $\begin{array}{r}1325\\ \underline{-214}\end{array}$

   g. $\begin{array}{r}8742\\ \underline{-4127}\end{array}$ h. $\begin{array}{r}86743\\ \underline{-21892}\end{array}$ i. $\begin{array}{r}351257\\ \underline{-165268}\end{array}$ j. $\begin{array}{r}900435\\ \underline{-417624}\end{array}$

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Learning to Compute	Do p. 19 & 20
4	Learning to Compute	Do p. 22 & 23
1	Spectrum Yellow	Do p. 3
4	Spectrum Blue	Do p. 5

FOR FUN, try the Famous Alaskans Puzzle next page.

26

FAMOUS ALASKANS PUZZLE

He was a German biologist who explored Alaska with Vitus Bering. He discovered several new species of birds and animals while here, such as a jay and a sea lion. He had some ideas on eating wild Alaskan plants to prevent scurvy, but Bering wouldn't listen to him, so most of the Russian crew died.

5,725 1,954 97 157 5,725 .

494.

5,496 210 1,954 1,685 1,685 1,954 157

Work the addition problems below. Find the name of this scientist, famous in Alaskan history.

A. 1067 -443	B. 2485 -1853	C. 1218 -318	D. 9439 -4701	E. 4469 -2515	F. 6728 -5427	
G. 7879 -2154	H. 534 -468	I. 705 -376	J. 2512 -758	K. 1953 -895	L. 3542 -1857	
M. 1245 -566	N. 9865 -4825	O. 2005 -1908	P. 600 -352	Q. 900 -548	R. 800 -643	S. 8200 -2704
T. 605 -395	U. 453 -377	V. 8400 -4983	W. 5300 -4806	X. 5010 -2268	Y. 6040 -3881	Z. 5010 -4976

PROGRESS CHECK A

UNIT I - WHOLE NUMBERS RESULT

TOPIC C - SUBTRACTION CRITERIA 15/15

Marks

(4) 1. a. The difference of 5 and 3 is ____________________.

b. Subtracting 4 from 8 you get ____________________.

c. If you had 20 apples and ate 7 you would have ____________________.

d. Seven minus four is ______________________________.

(1) 2. Write "nine minus four is five" in symbols __________.

(5) 3. Do the following:

a. 5 - 3 = ____________________

b. 9 - 7 = ____________________

c. 51 - 9 = ____________________

d. 9 - 0 = ________

e. 11 - 9 = ________

(5) 4. Subtract:

a. $\begin{array}{r} 689 \\ \underline{42} \end{array}$ b. $\begin{array}{r} 653 \\ \underline{37} \end{array}$ c. $\begin{array}{r} 850 \\ \underline{21} \end{array}$ d. $\begin{array}{r} 8760 \\ \underline{602} \end{array}$ e. 968 - 47 = ____________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER **BEFORE** YOU GO ON.

PROGRESS CHECK B

UNIT I - WHOLE NUMBERS

TOPIC C - SUBTRACTION

RESULT

CRITERIA 14/15

Marks

(4) 1. a. The difference of 9 and 2 is ____________.

b. Subtracting 15 from 21 you get ____________.

c. If you have 24 dollars and spend 20 you have ________.

d. Fifteen minus ten is ____________.

(1) 2. Write "eight minus three is five" in symbols.

____

(5) 3. Do the following:

a. 6 - 4 = ____________

b. 8 - 1 = ____________

c. 63 - 7 = ____________

d. 6 - 0 = ____________

e. 12 - 8 = ____________

(5) 4. Subtract:

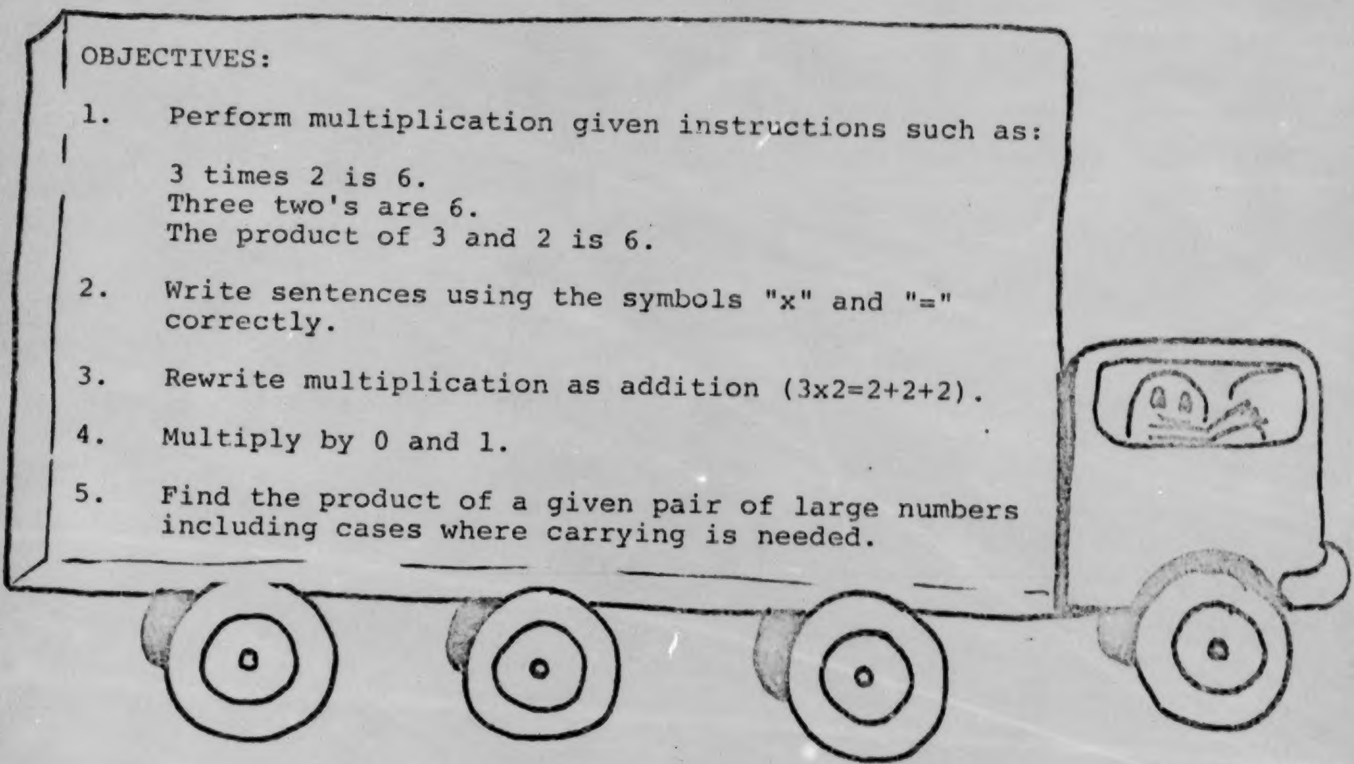
a. $\begin{array}{r}579\\ \underline{63}\end{array}$ b. $\begin{array}{r}542\\ \underline{27}\end{array}$ c. $\begin{array}{r}760\\ \underline{42}\end{array}$ d. $\begin{array}{r}7940\\ \underline{909}\end{array}$ e. 497 - 33 = ________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

UNIT I.

WHOLE NUMBERS:

D. MULTIPLICATION



OBJECTIVES:

1. Perform multiplication given instructions such as:

   3 times 2 is 6.
   Three two's are 6.
   The product of 3 and 2 is 6.

2. Write sentences using the symbols "x" and "=" correctly.

3. Rewrite multiplication as addition (3x2=2+2+2).

4. Multiply by 0 and 1.

5. Find the product of a given pair of large numbers including cases where carrying is needed.

OBJ.	SOURCE	WORK TO DO
1,2,4,5	Math, A Basic Course	Read p. 13 & 14, do p. 15

RAPID REVIEW

REMEMBER

```
****************************************************************
*                                                              *
*  Multiplication can be checked by interchanging the          *
*     multiplier and multiplicand and multiplying again.       *
****************************************************************
```

```
  537   multiplicand
  x46   multiplier
 3222
2148
24702   product
```

1. Multiply the following numbers:

```
a.   1   b.  31   c.   9   d.  30   e.  40    f.  63   g.  1414
    x7      x8       x0      x2       x1         x4       x231

h.  341   i.  5875   j.  9251   k.  700   l.  7487
   x200       x678       x809      x426       x869
```

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Learning to Compute	Do p. 10-15
4	Learning to Compute	Do p. 16
1,4	Spectrum Yellow	Do p. 15
5	Spectrum Blue	Do p. 11

32

PROGRESS CHECK A

UNIT I - WHOLE NUMBERS

RESULT

TOPIC D - MULTIPLICATION

CRITERIA 15/15

Marks

(3) 1. a. Five times four is ______________________.

b. Seven three's are ______________________.

c. The product of 4 and 2 is ______________________.

(1) 2. Write "six times four is twenty-four" in symbols.

____

(1) 3. Rewrite 4 x 2 = 8 as addition ______________________

(5) 4. Do these:

a. 6 x 3 = ______________ d. 5 x 1 = ______________

b. 3 x 6 = ______________ e. 9 x 6 = ______________

c. 4 x 0 = ______________

(5) 5. Multiply and show your work here:

a. $\begin{array}{r}42\\ \underline{2}\end{array}$ b. $\begin{array}{r}69\\ \underline{3}\end{array}$ c. $\begin{array}{r}407\\ \underline{24}\end{array}$ d. $\begin{array}{r}2005\\ \underline{100}\end{array}$ e. 27 x 13 = ______________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE you go on.

PROGRESS CHECK B

UNIT I - WHOLE NUMBERS RESULT

TOPIC D - MULTIPLICATION CRITERIA 14/15

Marks

(3) 1. a. Seven times four is ____________.

b. Eight seven's are ____________.

c. The product of 11 and 7 is ____________.

(1) 2. Write "thirty-three times four equals one hundred thirty-two" in symbols.

____

(1) 3. Rewrite 9 x 6 = 54 as addition ____________

(5) 4. Do these:

a. 4 x 5 = ____________

b. 5 x 4 = ____________

c. 9 x 8 = ____________

d. 90 x 0 = ____________

e. 42 x 1 = ____________

(5) 5. Multiply and show your work here:

a. $\begin{array}{r} 21 \\ \underline{3} \end{array}$ b. $\begin{array}{r} 28 \\ \underline{4} \end{array}$ c. $\begin{array}{r} 260 \\ \underline{23} \end{array}$ d. $\begin{array}{r} 479 \\ \underline{10} \end{array}$ e. 81 x 14 = ____________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

UNIT I.

WHOLE NUMBERS

E. DIVISION

OBJECTIVES:

1. Perform division given instructions such as:

   6 divided by 3 is 2.
   3 into 6 goes 2 times.
   3 into 6 is 2.
   The quotient of 6 divided by 2 is 3.

2. Write sentences using the symbols "-" and "=" correctly.

3. Perform division using 0 and 1 as in the cases

   6 - 1 = 6
   0 - 6 = 0

4. Perform division of large numbers including cases where there are remainders.

OBJ.	SOURCE	WORK TO DO
1,2,4	Math, A Basic Course	Read p. 16 & 17, do p. 18

RAPID REVIEW

REMEMBER

Division can be checked by multiplying the quotient and the divisor and adding the remainder to their product.

$$\begin{array}{rl} & \;\;2 \quad \text{quotient} \\ \text{divisor} \quad 2 & \overline{)\,4\,} \quad \text{divident} \end{array}$$

1. 9 goes into 81 ____.
2. The quotient of 72 divided by 8 is ____.
3. Find the quotient in each of the following:

a. $5\overline{)25}$ b. $9\overline{)81}$ c. $64 \div 8 =$ d. $54 \div 9 =$

e. $9\overline{)687}$ f. $42\overline{)367}$ g. $58\overline{)696}$ h. $123\overline{)975}$

i. $7\overline{)1425}$ j. $69\overline{)8345}$ k. $521\overline{)7295}$ l. $379\overline{)97542}$

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Learning to Compute	Do p. 24-27
4	Learning to Compute	Do p. 30 & 31
1	Spectrum Yellow	Do p. 27
4	Spectrum Yellow	Do p. 29
4	Spectrum Blue	Do p. 15, 17, 19

37

PROGRESS CHECK A

UNIT I - WHOLE NUMBERS　　　　RESULT

TOPIC E - DIVISION　　　　CRITERIA 15/15

Marks

(3) 1. a. Ten divided by two is ____________________.

b. 5 into 20 goes ____________ times.

c. The quotient of 30 divided by 6 is ______________.

(1) 2. Write "forty divided by eight equals five" in two ways using symbols.

____

(6) 3. Do these:

a. 8 ÷ 2 = ______________　　d. 100 ÷ 10 = ______________

b. 0 ÷ 4 = ______________　　e. 81 ÷ 3 = ______________

c. 42 ÷ 1 = ______________　　f. 27 ÷ 3 = ______________

(5) 4. Divide and show your work here:

a. $6\overline{)96}$　b. $9\overline{)243}$　c. $40\overline{)205}$　d. $352\overline{)7392}$

e. 299 ÷ 13 = ______________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT I - WHOLE NUMBERS

RESULT

TOPIC E - DIVISION

CRITERIA 14/15

Marks

(3) 1. a. Nine divided by three is ______________________.

b. 4 into 20 is ______________.

c. The quotient of 21 divided by 7 is ____________.

(1) 2. Write "twenty-four divided by six equals four" in two ways using symbols.

____________________ ____________________

(6) 3. Do these:

a. $16 \div 4 =$ __________

b. $0 \div 2 =$ __________

c. $32 \div 1 =$ __________

d. $1000 \div 100 =$ __________

e. $72 \div 3 =$ __________

f. $40 \div 5 =$ __________

(5) 4. Divide and show your work here:

a. $6\overline{)66}$ b. $8\overline{)176}$ c. $30\overline{)965}$ d. $465\overline{)11{,}160}$

e. $360 \div 12 =$ ______________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

UNIT I.

WHOLE NUMBERS

F. WORD PROBLEMS

OBJECTIVES:

1. State the steps in solving a word problem:

   a. What are you asked to do?
   b. What key words are in the problem?
   c. What facts are you given?
   d. Which of these facts do you need?
   e. How can you arrange these facts to find the answer?

2. Apply each or all of the avove in solving a given whole number problem.

WORD PROBLEMS

Word problems are an important part of math. Although not necessarily fun, they are essential in making math a useful and meaningful part of life. There is no easy way to do word problems. You must practice!!

NOT ALWAYS, but sometimes there are "Key" words in a word problem that can give you hints as to how to do a word problem. Some of these "Key" words follow:

Key Words for Addition

Sum - the sum of 3, 4, and 6
Total - the total of 9, 7, and 4
Addition - the addition of 4 feet
Plus - plus 6¢
Increase - increased 10%
Added to - 55¢ was added to the price
Both - how many live in both houses
Together - how much do they weigh together

Example:

The skipper had a ten foot "addition" put on his 60 foot crabber. How long is it now?

Now write your own problems using each of these "Key" words.

Key Words for Subtraction

Difference - What is the difference between 18 and 10
Fewer - how many fewer dogs are 7 than 19
Remain - how many remain after 3 of the 10 leave
Less - there are 4 less than 8
Reduced - the Honda was reduced by $30

Example:

Walter used 15 drums of oil during the winter. Bill used 11 drums. How many "less" did Bill use than Walter?

Now write your own problems using each of these "key" words.

Key Words for Multiplication

Total - what is the total for three days work at $30 per day
Of - 1/4 of the 1000 fish got away
Times - there are 4 times as many salmon this year
At - what is the price of an 8 pound salmon at 85¢ per pound
Product - what is the product of 7 and 9

Example:

24 planes landed at the village last month. 1/4 "of" them brought no passengers. How many brought no passengers?

Now write your own problems using each of these "key" words.

Key Words for Division

Ratio - what is the ratio of 5 to 20
Divide -the crew was divided into 4 parts

Example:

21 boys and 27 girls went berry picking. What is the "ratio" of boys to girls?

Now write your own problems using each of these "key" words.

Now try these:

1. What is the difference between Don's 4700 lb. truck and Ted's 5300 lb. truck?
2. In June Mrs. Bass saved $3.00 from the food budget, $2.00 from household budget, and $5.00 from transportation. What was the sum of her June savings?
3. The Cincinnati Machine Company publishes 1050 newspapers weekly for its employees. What is the total number of copies printed for 52 weeks?
4. The 16 repair orders were divided among the 4 maintenance crews. How many orders did each crew get?

Now how about word problems that don't have "key" words? What do we do now?

In order to correctly solve word problems you must carefully read the problem and then correctly use the given information. The following steps should prove to be a useful guide in solving word problems.

1. What are you asked to do?
2. What "key" words are in the problem?
3. What facts are you given?
4. Which of these facts do you need?
5. How can you arrange these facts to find the answer?

Then ask yourself: Does this answer make sense?
Is it reasonable?

Example 1:

The store sold 84 cans of pop on Monday, 106 cans on Tuesday, 79 cans on Wednesday, and 127 cans on Thursday. How many cans of pop were sold in those 4 days?

1. What are you asked to do? Find how many cans were sold.
2. What "key" words are in the problem? None.
3. What facts are you given? 4 days, 84 cans, 106 cans, 79 cans, 127 cans.
4. Which of these facts do you need? 84 cans, 106 cans, 79 cans, 127 cans.
5. How can you arrange these facts to find the answer?
84 cans + 106 cans + 79 cans + 127 cans = 396 cans

Does this make sense?

Example 2:

At 9:00 am. Monday morning there were 18 boys and 23 girls in school. What was the total number of students in school?

1. What are you asked to do? Find the total number of students in school.
2, What "key" words are in the problem? Total
3. What facts are you given? 9:00 am., 18 boys, 23 girls.
4. Which of these facts do you need? 18 boys, 23 girls.
5. How can you arrange these facts to find the answer?
18 girls + 23 girls = 41 students

Does this make sense?

Solve the following word problems using the guides given on previous pages:

1. Mrs. Wagner bought 5 pounds of tomatoes for 18 cents per pound. How much did she pay for the tomatoes?

2. Mrs. Holt keeps track of all the food she eats and records the calories. Monday she had 300 calories at breakfast, 350 at lunch and 375 calories at dinner. How many calories did she have that day?

3. A machinist selects a steel rod 36 inches long. He shortens the size of the rod by 9 inches. How long is the steel rod now?

4. Phil wants to earn $600 during the summer. So far he has earned $462.50. How much more does he need to earn?

5. A gallon of house paint covers 900 square feet of surface. How much paint will Mr. Greene need to paint his 4,500 square foot garage?

6. John Chiodi took a 4-day plane trip. The first day he flew 275 miles. The second day 236 miles. The third day 178 miles and the fourth day 256 miles. How many miles did John fly in those four days?

7. A brass rod measures 18 inches. It is to be cut into a number of pieces measuring 3 inches. How many pieces can be cut from the bar?

8. Mr. Lopez worked 40 hours one week for $4 an hour. How much did he earn that week?

9. The Prescott family took a 4-day automobile trip. The first day they drove 268 miles. The second day 372 miles. The third day 324 miles and 295 miles the fourth day. How many miles were driven?

10. A steel rod 24 inches long is cut into 6 pieces. How many inches long will each piece be?

11. Carl is an NYC worker. He works 30 hours a week for $2 an hour. How much does he earn per week?

12. A machinist is selecting a steel rod that can be cut into 14 pieces, each 3 inches long for bolts. How long must the rod be to get these 14 pieces?

READY? OK, DO PROGRESS CHECK A.

PROGRESS check A

UNIT I - WHOLE NUMBERS RESULT

TOPIC F - PROBLEM SOLVING CRITERIA 10/10

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

Marks

(2) 1. A store sold 15 refrigerators at $298.00 each. How much money did they collect from the sale?

(2) 2. Mr. Jones is buying a house for $18,500. He makes a cash payment of $4,950. What is the amount still to be paid?

(2) 3. Jim shot 5 ducks, 3 geese, 4 pheasants, and 2 grouse. What was the total number of birds taken home?

(2) 4. A herd of cattle is to be divided equally between seven cowboys. How many cows would each receive if there were 1029 in the herd?

(2) 5. Mr. Johnson can buy an automobile for $2,150.00 cash, or $400.00 down and $80.00 a month for 24 months. How much can he save by paying cash?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT I - WHOLE NUMBERS

RESULT

TOPIC F - PROBLEM SOLVING

CRITERIA 9/10

Problems: Show the work you do to solve problems. One mark is for your work and one mark is for the correct answer

Marks

(2) 1. George has a stamp collection containing 127 stamps from Great Britain, 47 from Germany and 62 from France. How many stamps does he have?

(2) 2. Sarah's stamp collection contains 526 stamps. Bill's stamp collection contains 307 stamps. How many more stamps does she have than Bill?

(2) 3. If Mary buys 23 packages of stamps, each package containing 28 stamps, how many stamps did she buy?

(2) 4. At a recent collectors meeting, Tom gave away his stamp collection. He gave an equal number to each of the 37 members in the club. The number of stamps he started with was 5472. How many did each person get? And how many was Tom left with (remainder)?

(2) 5. In the Franklin High School there are 5 classes with 39 students on roll, 13 classes with 38 students, and 12 classes with 37 students. Find the total enrollment of the school.

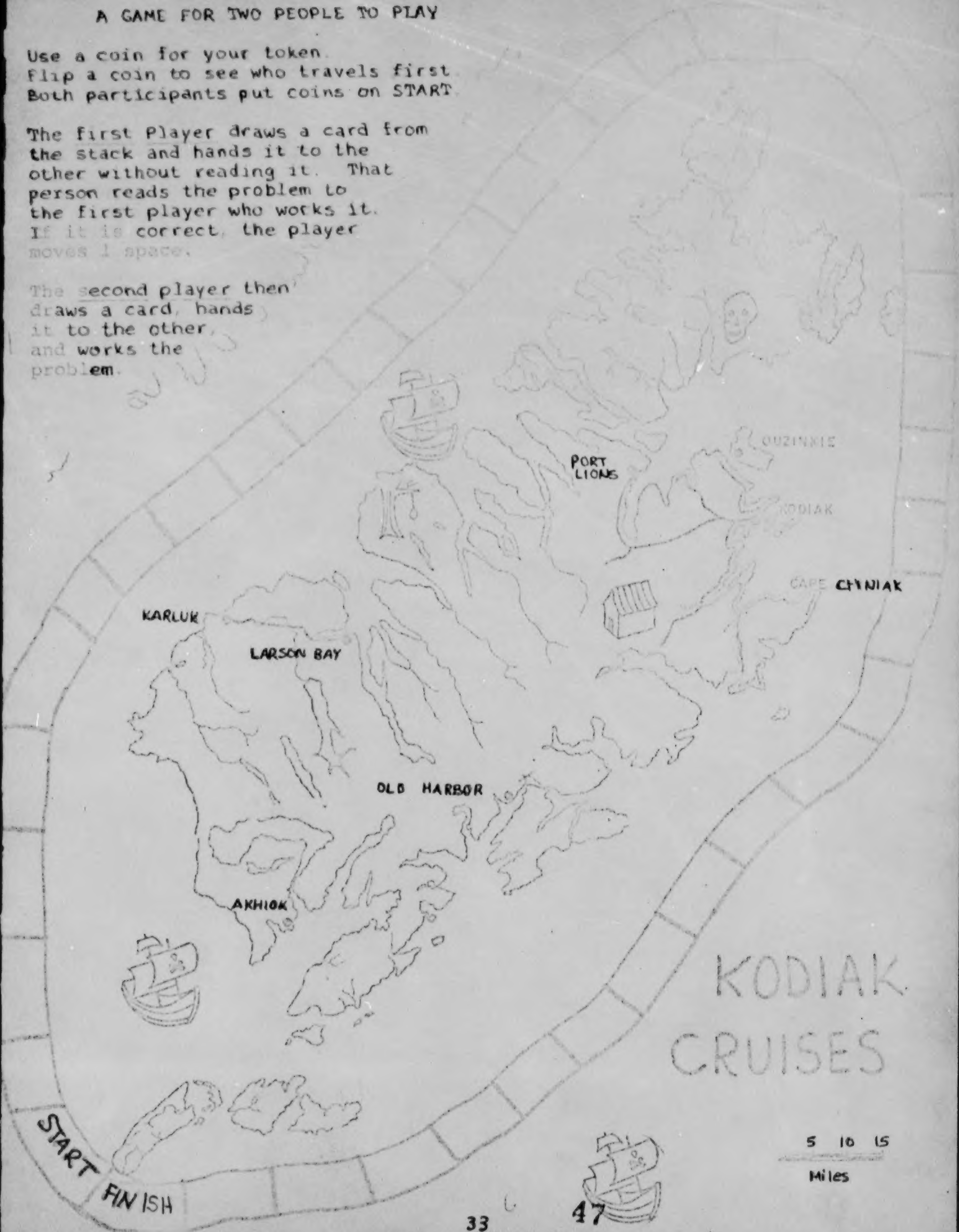
FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

A GAME FOR TWO PEOPLE TO PLAY

Use a coin for your token.
Flip a coin to see who travels first.
Both participants put coins on START.

The first player draws a card from the stack and hands it to the other without reading it. That person reads the problem to the first player who works it. If it is correct, the player moves 1 space.

The second player then draws a card, hands it to the other, and works the problem.


KARLUK
LARSON BAY
PORT LIONS
OUZINKIE
KODIAK
CAPE CHINIAK
OLD HARBOR
AKHIOK
KODIAK CRUISES
5 10 15
Miles
START
FINISH

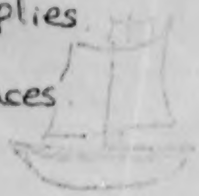
Addition

$$\begin{array}{r} \frac{7}{8} \\ + \frac{5}{8} \\ \hline 1\frac{1}{2} \end{array}$$

$$\begin{array}{r} \frac{2}{3} \\ + 3\frac{4}{5} \\ \hline 4\frac{7}{15} \end{array}$$

You met a ship that
sold you fresh food
and other supplies

Advance 2 spaces



$$\begin{array}{r} \frac{13}{15} \\ + \frac{12}{15} \\ \hline 1\frac{2}{3} \end{array}$$

$$\begin{array}{r} 4 \\ \frac{3}{8} \\ + \frac{3}{4} \\ \hline 5\frac{1}{8} \end{array}$$

$$\begin{array}{r} 3\frac{2}{3} \\ 2\frac{1}{5} \\ + 4\frac{3}{8} \\ \hline 10\frac{29}{120} \end{array}$$

$$\begin{array}{r} \frac{7}{12} \\ \frac{2}{9} \\ + 7 \\ \hline 7\frac{29}{36} \end{array}$$

$$\begin{array}{r} 2\frac{5}{6} \\ 3\frac{1}{5} \\ + 2\frac{4}{15} \\ \hline 8\frac{3}{10} \end{array}$$

$$\begin{array}{r} \frac{4}{9} \\ + \frac{5}{6} \\ \hline 1\frac{5}{18} \end{array}$$

48

$$\begin{array}{r} 6\frac{1}{10} \\ + \frac{5}{12} \\ \hline 6\frac{31}{60} \end{array}$$

Multiplication

Paste the game counts on cardboard and clip apart.

$8\times2\frac{5}{6}=22\frac{2}{3}$

$3\frac{1}{6}\times2\times9=57$

$4\frac{2}{3}\times9=42$

A favorite aunt just gave you 40 acres and a fish site.

Move ahead 3 spaces.

$1\frac{2}{3}\times1\frac{1}{5}=2$

$1\frac{1}{3}\times1\frac{1}{8}\times1\frac{2}{3}=2\frac{1}{2}$

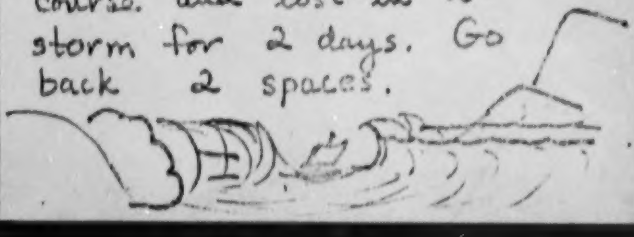
$1\frac{1}{9}\times\frac{3}{8}=\frac{5}{12}$

$\frac{4}{5}\times3\frac{1}{2}\times2\frac{1}{2}=7$

$\frac{5}{6}\times1\frac{1}{8}=\frac{15}{16}$

$1\frac{2}{7}\times2\frac{1}{3}=3$

Division	Paste playing cards on cardboard and cut apart.
$\begin{array}{r}90\\ .007\overline{).63}\end{array}$	Your ship hit a reef off Akhiok. Back up 2 spaces.
$\begin{array}{r}60\\ .7\overline{)42}\end{array}$	$\begin{array}{r}.023\\ 8\overline{).184}\end{array}$
$\begin{array}{r}1100\\ .05\overline{)55}\end{array}$	$\begin{array}{r}1.4\\ 3.8\overline{)5.32}\end{array}$
$\begin{array}{r}3.7\\ 4\overline{)14.8}\end{array}$	$\begin{array}{r}25\\ .36\overline{)9}\end{array}$
$\begin{array}{r}.14\\ 3\overline{).42}\end{array}$	50 $\begin{array}{r}2.6\\ .42\overline{)1.092}\end{array}$

Subtraction	Paste playing cards on cardboard and cut apart.
$\begin{array}{r} 7\frac{3}{8} \\ -\frac{5}{7} \\ \hline 6\frac{37}{56} \end{array}$	$\begin{array}{r} 1\frac{2}{5} \\ -\frac{7}{10} \\ \hline \frac{7}{10} \end{array}$
$\begin{array}{r} 9 \\ -\frac{5}{9} \\ \hline 8\frac{4}{9} \end{array}$	$\begin{array}{r} 14\frac{7}{15} \\ -3\frac{11}{12} \\ \hline 10\frac{11}{20} \end{array}$
$\begin{array}{r} \frac{9}{16} \\ -\frac{3}{16} \\ \hline \frac{3}{8} \end{array}$	$\begin{array}{r} 1 \\ -\frac{3}{10} \\ \hline \frac{7}{10} \end{array}$
$\begin{array}{r} \frac{6}{7} \\ -\frac{2}{3} \\ \hline \frac{4}{21} \end{array}$	$\begin{array}{r} \frac{3}{4} \\ -\frac{5}{12} \\ \hline \frac{1}{3} \end{array}$
$\begin{array}{r} \frac{11}{12} \\ -\frac{3}{12} \\ \hline \frac{2}{3} \end{array}$	Your ship was blown off course and lost in a storm for 2 days. Go back 2 spaces. 

Division	Paste playing cards on cardboard and cut apart.
1. $1\frac{3}{5} \div 3 = \frac{8}{15}$	$2 \div 2\frac{1}{3} = \frac{6}{7}$
$1\frac{7}{8} \div 3 = \frac{5}{8}$	$6 \div 1\frac{1}{7} = 5\frac{1}{4}$
$2\frac{1}{2} \div 6 = \frac{5}{12}$	2. $2\frac{2}{3} \div 1\frac{1}{4} = 2\frac{2}{15}$
$8 \div 1\frac{1}{3} = 6$	A crew member discovered gold. Advance 3 spaces.
$1\frac{4}{5} \div 6 = \frac{3}{10}$	52 $\frac{5}{8} \div 1\frac{1}{4} = \frac{1}{2}$

Addition and Subtraction

8.4
−3.575
4.825

7.22
−4.436
2.784

6.534
+7.827
14.361

3.6
+14.673
18.273

.42
+.9
1.32

53

Paste playing cards on cardboard and cut apart.

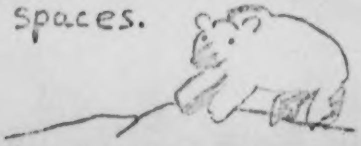
9.308
21.295
+.043
30.646

18.042
−12.345
5.697

9.2
4.375
+43.78
57.355

.442
−.375
.067

You went ashore and were mauled by a grizzly. Go back 3 spaces.



Multiplication

Paste playing cards on cardboard and cut apart.

.42
×5.3
2.226

1.73
×2.8
4.844

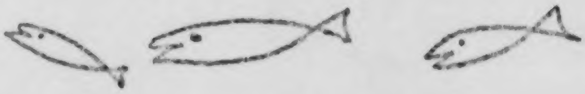
532
×.07
37.24

.67
×.02
.0134

4
×.02
.08

3.86
×4.04
15.5944

You were invited ashore for a feast. Move ahead 2 spaces.



5.3
×.04
.212

6.02
×.04
.2408

7.81
×15.2
118.712

ALASKA PLACE
PUZZLE

ALASKA PLACE PUZZLE #1

This is a body of water on which Alaska's largest city is located. It has several oil wells, mostly on property owned by Tyonek Indians. It is named for an English explorer.

27 36 36 $16.17 $1.46 32 3 25 $1800

To Play The Game:

1. Work each problem below.
2. When you have an answer, match it with that beneath one of the blanks.
3. Find the letter following the reading problem. Write the letter in the blank.
4. When you are finished, you will have spelled an Alaskan place name.

1. Forty per cent of the people in the village are in school. There are 80 people in the village. How many are in school? (N)

2. In Kodiak, the city collects a 3% sales tax on items sold. If you buy a snowmobile costing $538.98, how much tax will you pay? (K)

3. What would the sales tax amount to on $48.50 worth of groceries? (I)

4. Andrew made $3000.00 one summer helping his family fish. He wanted to go to college and become a marine biologist so he could learn more about fish. He saved 60% of his summer's earnings. How much money did he save in one summer? (T)

5. It costs about $5600.00 a year to attend most colleges. How many summers would it take Andrew to earn money for a year at college? (L)

6. In a village of 80, 45% are women. How many women live in the village? (O)

7. On a spelling test of 30 words, Ann's paper came back marked 90%. How many words did she get right? (C)

8. The amount of rainfall at Larsen Bay, on the northwest side of Kodiak Island, is only 42% of the amount that falls in the city of Kodiak, on the east end. If the town receives 60 inches of rainfall annually, how many inches of rain falls at Larsen Bay? (E)

ALASKA PLACE PUZZLE #2

This town of 4,000 on the Aleutian Chain is the most western city in the U.S. There is a Naval base there. It rains 261 days out of a year.

87 1/2   20   25   62 1/2

To Play the Game:

1. Work each problem below.
2. When you have an answer, match it with that beneath one of the blanks.
3. Find the letter that follows the reading problem. Write the letter in the blank.
4. When you are finished, you will have spelled an Alaskan place name.

1. One day 1/4 of all the students in the school were sick with the flu. What per cent were ill? (A)

2. When the school held its Eskimo Olympics, 5/8 of the students participated in at least one event. What per cent participated? (K)

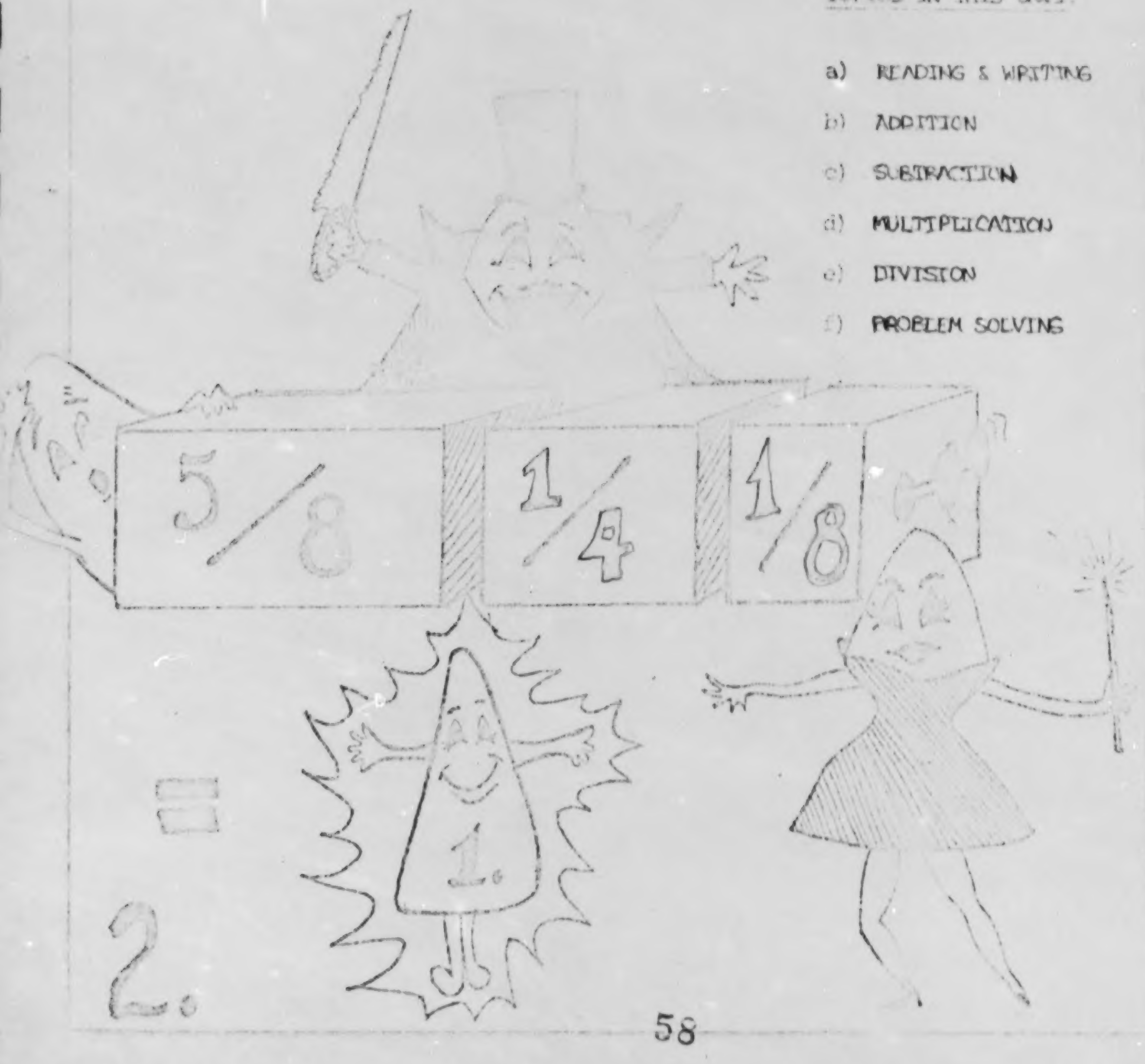
3. The sales catalog said everything was marked down 1/5. What was the per cent of markdown? (D)

4. The village held an election and 7/8 of the adults voted. What per cent voted? (A)

FRACTIONS

TOPICS IN THIS UNIT:

a) READING & WRITING
b) ADDITION
c) SUBTRACTION
d) MULTIPLICATION
e) DIVISION
f) PROBLEM SOLVING



Unit 2.

FRACTIONS

A. READING and WRITING

OBJECTIVES

1. Define a given fraction (i.e. 5/8 means 5 parts of 8 equal parts).
2. Identify numerator and denominator in a given fraction.
3. Identify fractions of the form 2/2, 3/3, etc. as being equal to 1.
4. Identify common fractions, improper fractions and mixed numbers.
5. Reduce a fraction to its lowest or simplest form and find the greates common factor.
6. Change improper fractions to mixed numbers and mixed numbers to improper fractions.
7. Write equivalent fractions for a given fraction given a numerator or denominator.
8. Write a set of fractions with a common denominator and find the least common multiple or least common denominator
9. Arrange a set of fractions in a given order by comparing numerators after writing the set with a common denominator.

* Show all work.

CHK.	OBJ.	SOURCE	WORK TO DO
	1,2,3	Math, A Basic Course	Read p. 25 & 26, do p. 27 & 28
	4	Math, A Basic Course	Read p. 28 & 29 do p. 29
	5	Math, A Basic Course	Read p. 29-31, do p. 32
	6,7	Math, A Basic Course	Read p. 32-34, do p. 34 & 35
	8,9	Math, A Basic Course	Read p. 45-47, do p. 47
	1	Spectrum Yellow	Do p. 69
	2	Spectrum Yellow	Do p. 70
	5	Spectrum Yellow	Do p. 77, 78, 79
	6	Spectrum Yellow	Do p. 83
	7	Spectrum Yellow	Do p. 75

RAPID REVIEW REMEMBER

A fraction represents a part of one whole thing.

$\frac{1}{4}$
1 ---Numerator
4 ---Denominator

1. What does 5/8 mean?
2. Complete the following:
   a. 4/4 = ______ b. 9/9 = ____ c. 119/119 = ____
3. Reduce to lowest form the following fractions:
   a. 6/8 = ____ b. 9/18 = ____ c. 4/6 = ____ d. 18/24 =____
4. Change the following to proper fractions:
   a. 5/2 = _____ b. 6/4 = _____ c. 24/12 = ____ d. 12/5 = ___
5. Arrange the following fractions from smallest to largest:
   12/12, 2/6, 12/24, 2/16, 6/8

READY? OK, DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Learning to Compute	Do p. 33
2	Learning to Compute	Do p. 33
7	Learning to Compute	Do p. 34 & 35
5	Learning to Compute	Do p. 36
6	Learning to Compute	Do p. 38 & 39
5	Refresher Math	Do p. 89 & 90
4	Refresher Math	Do p. 91-94, 116 & 117
6	Refresher Math	Do p. 91-94, 116 & 117
7	Refresher Math	Do p. 95 & 96
9	Refresher Math	Do p. 114 & 115

PROGRESS CHECK A

UNIT 2 - FRACTIONS RESULT

TOPIC A - READING AND WRITING CRITERIA 14/14

Do all work in your exercise book.

Marks

(1) 1. What does 2/3 mean? ______________________________

(1) 2. In 2/3 the numerator is? ______________________________

(3) 3. Match by writing the fraction on the left with its name on the right.

a. 2/3 1. ______mixed number

b. 1 2/3 2. ______common fraction

c. 3/2 3. ______improper fraction

(3) 4. Write in simplest form.

a. 4/4 ____, b. 16/8____, c. 20/25____.

(1) 5. Write 7/3 as a mixed number. ____________________

(1) 6. Write 9 3/5 as a improper fraction. ____________

(3) 7. Put the correct number in the ( ).

a. $3/4=\frac{(\ \ )}{12}$ b. $5/3=\frac{15}{(\ \ )}$ c. $6/6=\frac{(\ \ )}{108}$

(1) 8. Which is the larger number: 2/3 or 4/7? __________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 2 - FRACTIONS

TOPIC A - READING AND WRITING

RESULT

CRITERIA 12/14

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(1) 1. Write a symbol which represents 4 parts of 7 equal parts. ______________________

(1) 2. In 5/18 the denominator is ______________________

(3) 3. Name these as being a common fraction, an improper fraction, or a mixed number.

a. 5/16 ______________________

b. 9/8 ______________________

c. 17 1/5 ______________________

(3) 4. Write in simplest form.

a. 25/35 ______, b. 21/7 _____, c. 13/13 ____.

(1) 5. Write 28/27 as a mixed number. ______________

(1) 6. Write 12 2/3 as an improper fraction. __________

(3) 7. Write 3 equivalent fractions for 2/3.

_________ _________ _________

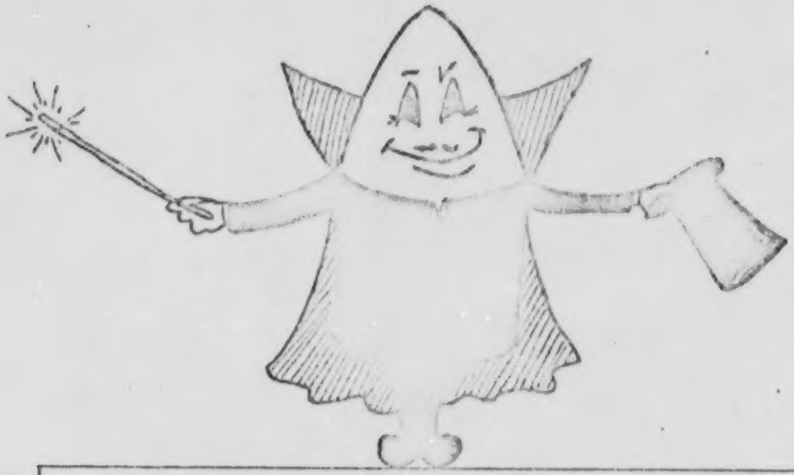
(1) 8. Which is the smaller number: 5/6 or 7/8? ________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 2.

FRACTIONS

B. Addition



OBJECTIVES:

1. Calculate the sum of a given pair of fractions with common denominators.
2. Calculate the sum of fractions with different denominators.
3. Calculate the sum of mixed numbers with like and unlike denominators.

* All answers to be given in simplest terms. Change improper fractions to mixed numbers.

* Show all work.

OBJ.	SOURCE	WORK TO DO
1,3	Math, A Basic Course	Read p. 36, Do p. 37
2,3	Math, A Basic Course	Read p. 38 & 39, Do p. 40
1	Spectrum Yellow	Do p. 72
2	Spectrum Yellow	Do p. 103 & 105
3	Spectrum Yellow	Do p. 107 & 108

RAPID REVIEW

REMEMBER

> 1. To add fractions having the same denominator, add their numerators and write the sum over the common denominator.
> 2. Always reduce to simplest form.

$$\frac{3}{4}\ \begin{matrix}\text{numerator}\\ \text{denominator}\end{matrix}$$

1. Add the following fractions:

a. 1/2 + 1/2 = b. 5/16 + 3/16 = c. 2/6 + 1/6 =

REMEMBER

> 1. To add fractions having different denominators, the fractions must be changed to equivalent fractions which have a common denominator.
> 2. Always reduce to lowest form.

2. Add the following fractions:

a.	b.	c.	d.	e.	f.
1/2	2/5	5/8	2 1/4	11 1/5	22 1/6
+1/6	+3/7	+1/6	+2 1/2	19 3/4	18 2/3
				+ 1/4	+31 1/2

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1,2,3	Refresher Math	Read p. 100, Do Green Test
1,2,3	Learning to Compute	Do p. 41

66

PROGRESS CHECK A

UNIT 2 - FRACTIONS RESULT

TOPIC B - ADDITION CRITERIA 8/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(8) 1. Add these and write the answers in simplest form.

a. 2/5 + 3/5 = ________

b. 1/2 + 7/8 = ________

c. 2 1/4 + 4/5 = ________

d. 11/3 + 7/3 + 1/3 = ________

e. 3 3/4 + 1 2/3 = ________

f. 2 5/8
+1 5/6

g. 3 4/5
+1

h. 42 1/5
+ 7 4/5

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 2 - FRACTIONS
TOPIC B - ADDITION

RESULT
CRITIERIA 7/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(8) 1. Add these and write the answers in simplest form.

a. 3/4 + 3/4 = ____________

b. 5/6 + 1/4 = ____________

c. 10/3 + 7/6 = ____________

d. 2 4/5 + 1 7/8 = ____________

e. 4 1/9 + 1/6 = ____________

f. 3 4/7
+1 2/3

g. 5 1/6
+1

h. 56 1/8
+43 7/8

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER **BEFORE** YOU GO ON.

Unit 2.

FRACTIONS

C. Subtraction

OBJECTIVES:

1. Calculate the difference of a pair of fractions with common denominators.
2. Calculate the difference of a given pair of fractions with different denominators.
3. Calculate the difference of two mixed numbers which have common or like denominators including cases where borrowing is required.
4. Calculate the difference of two mixed numbers which have unlike denominators including cases where borrowing is required.

* All answers to be given in simplest terms.

* Show all work.

OBJ.	SOURCE	WORK TO DO
1,3	Math, A Basic Sourse	Read p. 41, Do p. 42
1,3	Spectrum Yellow	Do p. 113 & 115
2,4	Math, A Basic Course	Read p. 42, 43, 44, Do p. 44 & 45
2	Spectrum Yellow	Do p. 117 & 119
4	Spectrum Yellow	Do p. 121

RAPID REVIEW

REMEMBER

> To subtract fractions having the same denominator subtract the numerators and write the difference over the common denominator. DO NOT SUBTRACT DENOMINATORS!!

$$\frac{3}{4}\ \begin{array}{l}\text{numerator}\\ \text{denominator}\end{array}$$

1. Subtract the following fractions:

a. 7/12 - 5/12 = b. 5/8 - 3/8 = c. 5/16 - 3/16 =

REMEMBER

> To subtract fractions having different denominators, first change the fractions to equivalent fractions having a common denominator.
>
> DO NOT SUBTRACT DENOMINATORS!

2. Subtract the following fractions:

a. 5/16 b. 9/10 c. 4/5 d. 8 13/14 e. 6 1/4 f. 32 1/
- 1/3 -1/5 -1/4 -4 5/7 -4 2/3 -10 5/

READY? OK, DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1,2,3,4	Refresher Math	Do Green Test & whatever sets are indicated
1	Learning to Compute	Do p. 49
2,3	Learning to Compute	Do p. 50
4	Learning to Compute	Do p. 51

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PROGRESS CHECK A

UNIT 2 - FRACTIONS

TOPIC C - SUBTRACTION

RESULT

CRITERIA 8/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(8) 1. Subtract these and write the answers in simplest form.

a. 4/7 - 2/7 = ____________

b. 5/6 - 3/4 = ____________

c. 5 7/8 - 3/4 = ____________

d. 4 1/3 - 2/3 = ____________

e. 3 1/4 - 2 7/10 = ____________

f. 9 3/4	g. 9 5/6	h. 10 4/7
-1 1/3	-2	- 1 4/7

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 2 - FRACTIONS
TOPIC C - SUBTRACTION

RESULT
CRITERIA 7/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(8) 1. Subtract these and write the answers in simplest form.

a. 3/5 - 1/5 = ________________

b. 3/7 - 1/3 = ________________

c. 2 3/4 - 2/3 = ________________

d. 5 1/6 - 5/6 = ________________

e. 2 5/8 - 1 5/6 = ________________

f. 12 3/8
- 7 7/8

g. 6 3/10
-5

h. 14 1/8
- 4 1/8

FINISHED? DORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 2.

FRACTIONS

D. Multiplication

OBJECTIVES:

1. Identify the terms "times" and "of" as meaning multiply.
2. Calculate the product of a common fraction and a whole number.
3. Calculate the product of a pair of common fractions.
4. Calculate the product of a mixed number and a whole number.
5. Calculate the product of a pair of mixed numbers.
6. Calculate the product of a common fraction and a mixed number.
7. Calculate the product of a set of numbers including whole numbers, common fractions, mixed numbers and improper fractions.

* All answers to be given in simplest terms.

* Show all work

OBJ.	SOURCE	WORK TO DO
1,2	Math, A Basic Course	Read p. 48 & 49, Do p. 49
3	Math, A Basic Course	Read p. 50 & 51, Do p. 52
5,7	Math, A Basic Course	Read P. 53 & 54, Do p. 54
6	Math, A Basic Course	Read p. 52, Do p. 53

RAPID REVIEW

REMEMBER

TO MULTIPLY A WHOLE NUMBER AND FRACTION

1. Reduce the fraction to lowest terms.
2. Change the whole number to an improper fraction by placing it over a denominator of one.
3. Multiply the two numerators.
4. Multiply the two denominators.
5. Reduce the product to lowest terms.

1. Multiply the following fractions

a. 2/3 x 2 = b. 1/2 x 23 = c. 12 x 2/5 = d. 7 x 4/5 =

e. 3/8 x 1/2= f. 7/16 x 2/3= g. 5/6 x 1/2= h. 4/9 x 2/3 x 7/8=

REMEMBER

To multiply a fraction and a mixed number:

1. Change the mixed number to an improper fraction.
2. Multiply, following the rules for multiplying fractions.

2. Multiply the following fractions:

a. 1 1/5 x 7/10= b. 3/5 x 2 3/10= c. 3 1/3 x 4/5=

d. 6 x 3 1/3= e. 36 x 2 5/7= f. 36 x 9 1/2=

g. 7 3/5 x 1 9/10= h. 16 1/2 x 2 1/11= i. 18 1/2 x 3 1/3=

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
2,3	Learning to Compute	Do p. 53-55
4,5,6	Learning to Compute	Do p. 56-57
7	Learning to Compute	Do p. 57-58
2	Spectrum Yellow	Do p. 91
3	Spectrum Yellow	Do p. 89
4	Spectrum Yellow	Do p. 93
5	Spectrum Yellow	Do p. 95

76

PROGRESS check A

UNIT 2 - FRACTIONS RESULT

TOPIC D - MULTIPLICATION CRITERIA 8/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(8) 1. Multiply these and write the answers in simplest form.

a. 4 x 3/4 = ____________________

b. 3/5 x 6/7 = ____________________

c. 2 1/2 x 1 3/4 = ____________________

d. 6/5 x 3 1/3 = ____________________

e. 1/5 of 30 is? ____________________

f. 1/3 of 3 3/4 = ____________________

g. 5 x 4 3/8 = ____________________

h. 3 1/5 x 1 1/4 x 1 1/3 = ____________________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS check B

UNIT 2 - FRACTIONS RESULT

TOPIC D - MULTIPLICATION CRITERIA 7/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(8) 1. Multiply these and write, the answers in simplest form.

a. 5 x 2/3 = ______________________

b. 3/7 x 8/9 = ______________________

c. 5 1/2 x 2 1/4 = ______________________

d. 12/11 x 2 1/2 = ______________________

e. 1/3 of 72 is? ______________________

f. 1/6 of 3/4 is? ______________________

g. 7 1/2 x 6 = ______________________

h. 2 3/4 x 1 1/8 x 3 5/6 = ________________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 2.

FRACTIONS

E. Division

OBJECTIVES:

1. Calculate the quotient when dividing a common fraction by a whole number.

2. Calculate the quotient when dividing a whole number by a common fraction.

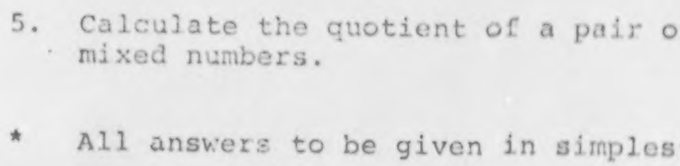
3. Calculate the quotient of a pair of common fractions.

4. Calculate the quotient of a mixed number and a whole number.

5. Calculate the quotient of a pair of mixed numbers.

* All answers to be given in simplest terms.

* Show all work.



OBJ.	SOURCE	WORK TO DO
1	Math, A Basic Course	Read p. 60, Do p. 61
1	Spectrum Green	Do p. 59
2	Math, A Basic Course	Read p. 57 & 58, Do p. 58
2	Spectrum Green	Do p. 57
3	Math, A Basic Course	Read p. 59, Do p. 60
3	Spectrum Green	Do p. 61
4,5	Math, A Basic Course	Read p. 61, Do p. 62
4	Spectrum Green	Do p. 67
5	Spectrum Green	Do p. 69 & 71

RAPID REVIEW

REMEMBER

****

TO DIVIDE FRACTIONS:
1. Invert the divisor (the second number).
2. Change the division sign to multiplication.
3. Multiply following the rules for multiplication.

****

1. Divide the following fractions:

a. 15 ÷ 1/5= b. 6 ÷ 3/8= c. 20 ÷ 4/5= d. 18 ÷ 2/3=

e. 1/4 ÷ 3/8= f. 1/4 ÷ 3/16= g. 9/10 ÷ 1/5=

REMEMBER

****

To divide fractions by whole numbers:
1. Write the whole number over 1.
2. Invert the divisor (the second number).
3. Change the division sign to multiplication and multiply.

****

2. Divide the following fractions:

a. 2/3 ÷ 8= b. 3/8 ÷ 12= c. 3/4 ÷ 6= d. 3/5 ÷ 6=

e. 6 ÷ 2 1/2= f. 4 ÷ 6 2/3 = g. 2 1/16 ÷ 1 5/6=

READY? OK, DO PROGRESS CHECK A.
NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1,2,3,4, 5	Learning to Compute	Do p. 60-62

81

PROGRESS CHECK A

UNIT 2 - FRACTIONS RESULT

TOPIC E - DIVISION CRITERIA 8/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(8) 1. Divide these and write the answers in simplest form.

a. 1/2 ÷ 1/4 = ____________________

b. 2/3 ÷ 5 = ____________________

c. 8 ÷ 3/4 = ____________________

d. 6 ÷ 2 1/2 = ____________________

e. 8 6/7 ÷ 2/9 = ____________________

f. 5 2/7 ÷ 2 13/49 = ____________________

g. 5/9 ÷ 15/21 = ____________________

h. 1 ÷ 5/6 = ____________________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE
YOU GO ON.

PROGRESS CHECK B

UNIT 2 - FRACTIONS

TOPIC E - DIVISION

RESULT

CRITERIA 7/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(8) 1. Divide these and write the answers in simplest form.

a. 3/4 ÷ 5/6 = ______________________________

b. 4 1/5 ÷ 3 1/3 = ______________________________

c. 4/7 ÷ 4 = ______________________________

d. 10 ÷ 4/5 = ______________________________

e. 16 ÷ 2 1/2 = ______________________________

f. 11/3 ÷ 9/4 = ______________________________

g. 7 1/2 ÷ 1 1/4 = ______________________________

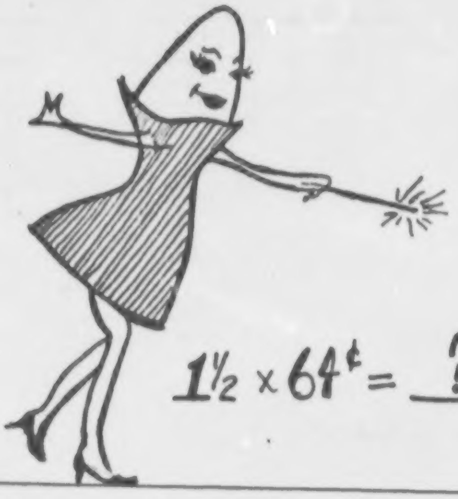
h. 1 ÷ 5/8 = ______________________________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 2

FRACTIONS

F. Word Problems



$1\frac{1}{2} \times 64¢ = \underline{\ ?\ }$

OBJECTIVE:

1. Apply each of all of the steps in solving a given word problem.

* All answers to be given in simplest terms.

* Show all work.

OBJ.	SOURCE	WORK TO DO
1	Stars Book	Read Unit I word problems

REQUIRED REVIEW

REMEMBER

Use the five step method for solving word problems.

Solve the following word problems, using the five step method. Be sure to show all of your work and correctly label your answers.

1. During the year Mr. Griffin bought the following amounts of fuel oil to heat his house: 175 gallons, 208 gallons, 246 gallons, 239 gallons, 195 gallons, and 250 gallons. How many gallons of fuel oil did he buy in all?

2. The deepest place thus far discovered in the world is 35,640 feet in the Marianas Trench near the island of Guam. The greatest depth in the Atlantic Ocean is 30,246 feet, located near Puerto Rico. Find the difference in these depths.

3. At an average ground speed of 325 miles per hour, how far can an airplane fly in 14 hours?

4. An airplane left airport A at 1 P.M. and reached airport B 1,176 miles away at 4 P.M. Find the average speed of the airplane.

5. Alaska has a land area of 591,065 square miles and inland water area of 15,335 square miles while Hawaii has a land area of 6,415 square miles and an inland water area of 9 square miles. Find the total of each state and the difference in their total areas.

6. What is the perimeter (distance around) of a triangle if its three sides measure 6 3/8 inches, 4 11/16 inches, and 5 3/4 inches respectively.

7. Find the cost of:
a. 1 1/2 dozen eggs at 64¢ per dozen.
b. 1 1/4 pounds meat at 72¢ per pound.
c. 3 3/4 pounds of bananas at 33¢ per pound.

8. If normal body temperature is 98 3/5 degrees, how many degrees above normal is a temperature of 101 degrees?

9. Larry wishes to use a recipe, but it makes twice the quantity he needs. If the recipe requires 1/4 cup flour, 2 1/2 tablespoons lemon juice, 1 cup of milk and 3/4 cup sugar, how much of each ingredient should he take to make the quantity he wants?

10. Find the total weight if a metal can weighs 2 7/8 ounces and its contents weighs 12 3/4 ounces.

11. The tank on Andy's snowmachine will hold 3/4 gallon of gasoline. Suppose the tank is 1/2 full. How many gallons of gasoline are in the tank?

12. A motorboat uses 1 1/4 gallons of fuel each hour. At this rate how long can the boat be operated before 10 gallons of fuel are used?

13. Tim weighs 114 1/2 pounds and Jim weighs 107 3/4 pounds. How much more does Tim weigh than Jim?

14. What is the combined weight of Tim and Jim in problem 13?

15. After working 3 1/2 hours at a job, a man is joined at work by two other men. It takes 2 1/4 hours for all three men to complete the job. What is the total number of man hours spent on the job?

PROGRESS check A

UNIT 2 - FRACTIONS . RESULT

TOPIC F - PROBLEM SOLVING CRITERIA 8/8

Problems: Show the work you do to solve problems. One mark is for your work and one mark is for the correct answer.

Marks

(2) 1. What fraction of a test is done if you have completed up to question 9 and there are 45 questions on the test?

(2) 2. A 15 3/4 foot long piece of pipe is to be cut into 2 1/4 foot sections. How many pieces of pipe would you have?

(2) 3. Mr. Wilson wishes to know how long it would take him to drive from Prince George to Vancouver. He knows that it will take him approximately 5 3/4 hours to get from Prince George to Cache Creek, 2 2/3 hours from Cache Creek to Hope and 1 1/2 hours from Hope to Vancouver. How much time should be allowed for the trip?

(2) 4. Mrs. Shepard must travel a distance of 15 miles to go to work. If she travels 2 1/4 miles to a gas station and then 3 2/5 miles to a store, how much further must she travel to arrive at work?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 2 - FRACTIONS RESULT

TOPIC F - PROBLEM SOLVING CRITERIA 7/8

Problems: Show the work you do to solve problems. One mark is for your work and one mark is for the correct answer.

Marks

(2) 1. John worked 4 1/2 hours on Monday, 6 3/4 hours on Tuesday and 5 1/6 hours on Wednesday. He worked 6 1/3 hours on both Thursday and Friday. What is the total of hours worked that week?

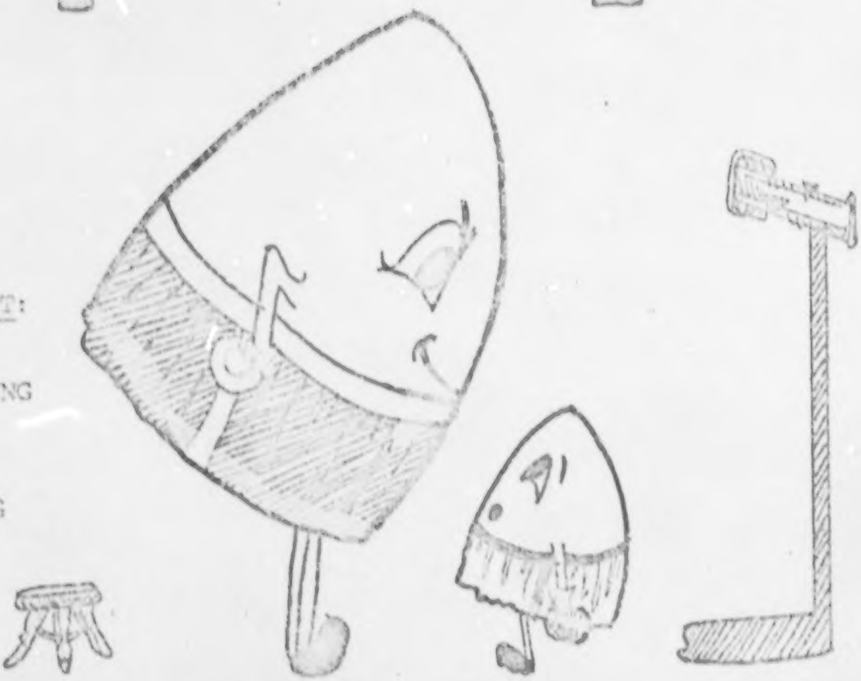
(2) 2. If Bill cuts 3 pieces of wood, each 1 3/8 feet long, from a board 7 4/5 feet in length, how long is the board when he has finished with it?

(2) 3. How many pieces of pipe, each one 3 1/7 feet in length, can be cut from a pipe 16 4/7 feet in length?

(2) 4. How long should roast beef be cooked if it weighs 4 3/4 pounds and is to be cooked for 42 minutes per pound? (Round off answer to the nearest minute.)

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

3. RATIO & PROPORTION



TOPICS IN THIS UNIT:

a) READING & WRITING

b) OPERATIONS

c) PROBLEM SOLVING

Unit 3.

RATIO and PROPORTION

A. Reading and Writing

OBJECTIVES:

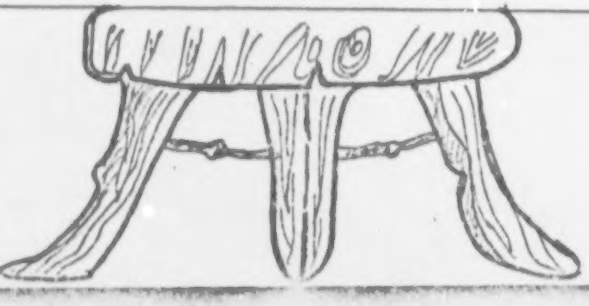
1. Define ratio by giving an example.
2. Write ratios in the form $\frac{A}{B}$ and A:B.
3. Define a proportion by giving an example.
4. Write proportion in the form:

$$\frac{A}{B} = \frac{C}{D} \text{ and } A:B = C:D$$

Note: "proportion means the same as "equivalent ratios".

* All answers to be given in simplest terms.

* Show all work.



OBJ.	SOURCE	WORK TO DO
1	Stars Book	Read "Information for Objective 1' Do the problems that follow.
2	Stars Book	Read "Information for Objective 2' Do the problems that follow.
3	Stars Book	Read "Information for objective 3" Do the problems that follow.
4	Stars Book	Read "Information for Objective 4" Do the problems that follow.

Information for Objectives 1 & 2

Ratio is method of comparing two numbers by division.

Example: Compare 3 and 5: 3/5 or 3:5 (which is read as "3 to 5")

Example: Compare 5 and 3: 5/3 or 5:3 (which is read as "5 to 3")

Example: Compare 10 and 40: 10/40 or 10:40
however, in this case we can do some reducing and get

1/4 or 1:4

It is easier to think of 1 thing compared to 4 things rather than 10 things compared to 40 things. So reduce the ratio whenever you can.

Example: Compare 60 to 12: It is 60/12, which reduces to

5/1 or 5:1

Note: When dealing with ratios we leave the 1 in the denominator.

Sample Problems

1. Compare the following: Use both methods as shown on the first page. All answers to be given in simplest terms.

   Example: Compare 10 to 41 - 10/41 or 10:41

   a. Compare 10 to 3
   b. Compare 3 to 10
   c. Compare 60 to 15
   d. Compare 5 to 50
   e. Compare 3 to 27
   f. Compare 27 to 81
   g. Compare 21 to 14
   h. Compare 108 to 96
   i. Compare 5 to 9
   j. Compare 9 to 4
   k. Compare 7 to 93
   l. Compare 3 to 93
   m. Compare 96 to 6
   n. Compare 6 to 4
   o. Compare 3 to 2
   p. Compare 4 to 1
   q. Compare 10 to 50
   r. Compare 50 to 55
   s. Compare 13 to 39
   t. Compare 39 to 89
   u. Compare 87 to 7
   v. Compare 121 to 144

Information for Objectives 3 & 4

It is possible to have one ratio equivalent to another ratio. This is called a proportion.

Example: 4/5 = 8/10 or 4:5 = 8:10

These are read as "4 is to 5 as 8 is to 10"

Suppose we are given the proportion 2:6 = 1:3 and we are asked if it is a true statement. There is a method of finding out.

Method:

$$\overbrace{2:\underbrace{6 = 1}_{\text{Inner Terms}}:3}^{\text{Outer Terms}}$$

The product of the outer terms is equal to the product of the inner terms.

$$\overbrace{2:\underbrace{6 = 1}_{\times}:3}^{\times}$$

$$2 \times 3 = 6 \times 1$$
$$6 = 6$$

Therefore 2:6 = 1:3 is a true statement.

Sample Problems

2. Write the TRUE statements:

a. 4:8 = 5:10

b. 3:5 = 8:10

c. 3:5 = 6:10

d. 3:7 = 18:42

e. 3:7 = 12:28

f. 3:1 = 45:15

g. 3:4 = 8:12

h. 3:4 = 9:12

i. 2:1 = 8:4

j. 3:9 = 1:4

k. 3:9 = 1:3

Equality Involving Ratios: (Proportions)

Instead of being asked if 4:5 = 8:10 is a true statement, we could be asked if 4/5 = 8/10 is a true statement.

Method: 4/5 = 8/10 Cross Multiply

$\frac{4}{5} \times \frac{8}{10}$ 4 x 10 = 5 x 8

40 = 40

Therefore 4/5 = 8/10 is a true statement.

4/5 = 8/10	4:5 = 8:10
4 x 10 = 5 x 8	4 x 10= 5 x 8
40 = 40	40 = 40

3. Write the TRUE statements:

a. 5/3 = 8/10

b. 5/3 = 10/6

c. 4/1 = 40/10

d. 5/8 = 20/32

e. 6/9 = 2/3

f. 21/7 = 3/1

g. 121/12 = 242/24

h. 5/7 = 15/21

RAPID REVIEW

REMEMBER

1. A ratio is a method of comparing two numbers by division.
2. Some ratios can be made simpler, or reduced (like fractions.

1. 14 ducks and 21 geese. What is the ratio of ducks to geese?

REMEMBER

1. A proportion is two equivalent ratios.
2. Check a proportion by cross-multiplying.

2. Write a proportion, using the ducks and geese ratio from the last problem. Check your answer by cross-multiplying.

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1,2	Refresher Math	Do p. 517, 1, 2, 3
1,2	Spectrum Blue	Do p. 69, 1-10
3,4	Refresher Math	Do p. 519, problems 1 & 4
3,4	Spectrum Blue	Do p. 70, 1-10

PROGRESS CHECK A

UNIT 3 - RATIO AND PROPORTION RESULT

TOPIC A - READING AND WRITING CRITERIA 6/6

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(1) 1. Give an example of a ratio. ______________________

(2) 2. Write the ratio of 5 to 3 in two ways.

______________ ______________

(1) 3. Give an example of a proportion.

____

(2) 4. Write the proportion 1 is to 3 as 4 is to 12 in two ways.

______________ ______________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE
YOU GO ON.

PROGRESS CHECK B

UNIT 3 - RATIO AND PROPORTION RESULT

TOPIC A - READING AND WRITING CRITERIA 4/5

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(1) 1. Give an example of a ratio. ____________________

(1) 2. The ratio of 1 to 3 can be written 1/3.

Write it another way. ____________________

(1) 3. Give an example of a proportion. ____________________

(2) 4. Write the proportion 5 is to 2 as 10 is to 4 in two ways.

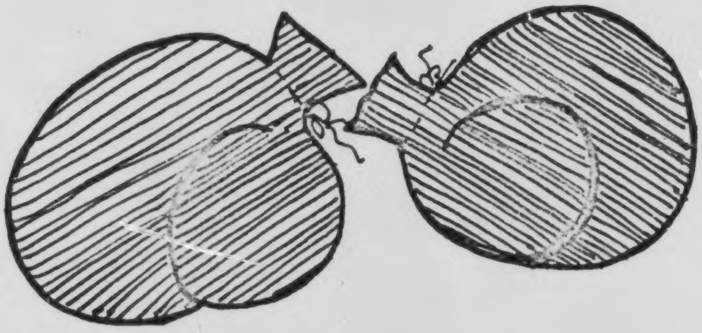
____________________ ____________________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 3

RATIO and PROPORTION

B. Operations



OBJECTIVES:

1. Calculate the ratio of two quantities and write it as a common fraction in simplest terms.

2. Solve proportions in which one ratio is incomplete.

* All answers to be given in simplest terms.

* Show all work.

OBJ.	SOURCE	WORK TO DO
1	Stars Book	Read "Information for Objective 1" Do the problems that follow.
2	Stars Book	Read "Information for Objective 2" Do the problems that follow.

SAMPLE PROBLEMS

Information for Objective 1

The real definition of Ratio is a comparison of two quantities expressed in the same units. If you are comparing dollars to cents, you must first change the dollars into cents. Then you can go ahead and compare cents to cents.

Example: Compare 3 dollars to 20 cents.

3 dollars = 3 x 100 = 300 cents

What we are really comparing is 300 cents to 20 cents. The answer would be $\frac{300¢}{20¢}$ or 300:20 which reduces to:

15:1 or 15/1.

Example: Compare 5 minutes to 1 hour.

Since 1 hour = 60 minutes, $\frac{5 \text{ minutes}}{60 \text{ minutes}} = 5/60 = 1/12$

or 1:12

Note: Units cancel out just like numbers, but make sure the units are the same before you cancel them.

1. Compare the following quantities:

   a. Compare 5 hours to 90 minutes
   b. Compare 3 hours to 45 minutes
   c. Compare $3.15 to 45¢
   d. Compare $20 to $1.15

Sometimes numbers to be compared will be worded differently from the ones you just did.

Example: Express 47 as a fraction of 123.

This is another way of saying compare 47 to 123. The answer would be 47/123.

*You can see in the example that the number following the word "of" becomes the denominator of the fraction.

Example: Express 35 as a fraction of 50. Answer is 35/50 or7/1

Example: Express 95 as a fraction of 55. Answer is 95/55 or 19/11 or 1 8/11.

2. Do the following:

a. Express 23 as a fraction of 96.

b. Express 135 as a fraction of 50.

c. Express 21 as a fraction of 13.

d. Express 139 as a fraction of 210.

e. Express 14 as a fraction of 21.

f. Express 83 as a fraction of 39.

g. Express 37 as a fraction of 67.

h. Express 24 as a fraction of 4.

i. Express 69 as a fraction of 38.

j. Express 32 as a fraction of 8.

k. Express $15 as a fraction of $25.

l. Express $1.15 as a fraction of $3.50.

Information for Objective 2

We already know that 2:6 = 1:3 is a true statement. But suppose we are given 2:6 = 1:N?

What we have to do here is find the missing term.

Method: We already know that the product of the inner terms (6 x 1) is equal to the product of the outer terms (2 x N).

So, $2 \times N = 6 \times 1$

Now, to get the N by itself, divide both sides of the equation by 2.

$$\frac{2 \times N}{2} = \frac{6 \times 1}{2} \quad \text{or} \quad N = \frac{6 \times 1}{2} \qquad \text{So, } N = 3$$

Check your answer by putting the 3 where the N was:

$$2 \times 3 = 6 \times 1 \quad \text{or} \quad 6 = 6$$

Example:

$$3:N = 4:9$$
$$N \times 4 = 3 \times 9$$
$$\frac{N \times 4}{4} = \frac{3 \times 9}{4}$$
$$N = \frac{3 \times 9}{4}$$
$$N = 27/4 \text{ or } 6\ 3/4$$

Example:

$$6:13 = N:7$$
$$13 \times N = 6 \times 7$$
$$\frac{13 \times N}{13} = \frac{6 \times 7}{13}$$
$$N = \frac{6 \times 7}{13}$$
$$N = 42/13 \text{ or } 3\ 3/13$$

Example:

$$N:16 = 5:4$$
$$N \times 4 = 16 \times 5$$
$$\frac{N \times 4}{4} = \frac{16 \times 5}{4}$$
$$N = \frac{16 \times 5}{4}$$
$$N = 20$$

3. Find the missing term for each of the following proportions:

a. 4:8 = 5:N
b. N:5 = 6:10
c. 3:N = 18:42
d. 3:N = 45:15
e. 3:4 = 9:N
f. 2:N = 8:4
g. 3:9 = 1:N
h. 3:5 = N:15
i. 21:N = 21:14
J. 16:8 = 64:N

2:6 = 1:N could also have been written as 2/6 = 1/N and again we must find the missing term.

Method: Cross-Multiply

2/6 = 1/N so $2 \times N = 6 \times 1$. Then finish as before:

$$\frac{2 \times N}{2} = \frac{6 \times 1}{2} \qquad N = \frac{6 \times 1}{2} \qquad N = 3$$

Example:

$$\begin{aligned} 3/8 &= N/24 \\ 8 \times N &= 3 \times 24 \\ \frac{8 \times N}{8} &= \frac{3 \times 24}{8} \\ N &= \frac{3 \times 24}{8} \\ N &= 9 \end{aligned}$$

Example:

$$\begin{aligned} 3/N &= 19/21 \\ 19 \times N &= 3 \times 21 \\ \frac{19 \times N}{19} &= \frac{3 \times 21}{19} \\ N &= \frac{3 \times 21}{19} \\ N &= 63/19 \text{ or } 3\ 6/19 \end{aligned}$$

4. Find the missing term for each of the following: Show all work.

a. 5/3 = N/9
b. 5/N = 10/6
c. 4/1 = 40/N
d. N/8 = 20/32
e. N/9 = 2/3
f. 21/7 = 3/N
g. 121/N = 242/24
h. 7/N = 49/21
i. 8/64 = N/8
j. 39/3 = 13/N
k. 22/33 = 5/N
l. 4/32 = 32/N
m. 16/3 = 48/N
n. 15/60 = 1/N

RAPID REVIEW

REMEMBER

When comparing two things, make sure the units are the same; if they aren't, change one of them to be like the other (for instance, to compare dollars to cents, change the dollars to cents first).

1. Express 4 inces as a fraction of 1 foot.

REMEMBER

1. In a proportion, the product of the inner terms is equal to the product of the outer terms.
2. When the proportion is written using fractions, cross-multiply to find the missing term.

2. Find the missing term in the following proportions:

a. 6:7 = 9:N

b. 8/5 = N/3

READY? OK, DO PROGRESS CHECK A.
NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Learning to Compute	p. 96, Inventory Test 82, 1-3 p. 97, Practice Set 82A, 1-5
2	Refresher Math	p. 519-520, problems 2 a,b,c,d
2	Spectrum Blue	p. 71, 1-4 p. 72, 1-4

PROGRESS CHECK A

UNIT 3 - RATIO AND PROPORTION — RESULT

TOPIC B - OPERATIONS — CRITERIA 7/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(2) 1. Write these as ratios in simplest form. Show your work.

a. Ratio of your age to your mother's if you are 26 and she is 52?

____

b. Ratio of people per square mile if there are 10,000 people in 200 square miles?

____

(4) 2. Complete the following by putting the correct number in the ( ).

a. 12:3 = ( ) :2

b. 20: ( ) = 8:6

c. $6/15 = \frac{4}{(\quad)}$

d. $\frac{(\quad)}{42} = 30/70$

Problem: Show the work you do to solve the problem. One mark is for your work, and one mark is for the correct answer.

(2) 3. Susan has \$464 in her bank account. She spends 3/8 of this amount on a TV set. What was the cost of the TV set?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 3 - RATIO AND PROPORTION RESULT

TOPIC B - OPERATIONS CRITERIA 8/10

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(2) 1. Write the following ratios in simplest form. Show your work.

a. Ratio of right to wrong answers if you got 12 out of 15 correct.

b. Ratio of men to women in a class if there were 6 men and 18 women.

(4) 2. Put the correct number in the ( ) to make these proportions correct.

a. 3:2 = 24: ( )

b. ( ) : 7 = 27:63

c. $3/5 = \frac{(\quad)}{40}$

d. $9/15 = \frac{21}{(\quad)}$

Problems: Show the work you do to solve the problems. One mark is for your work, and one mark is for the correct answer.

(2) 3. If Mary bought a dozen (12) oranges for 80¢, what would she have to pay for 15 oranges?

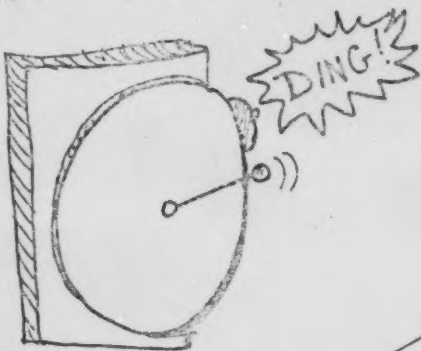
(2) 4. If 2 tickets cost $8.80, find the cost of 9 tickets.

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 3

RATIO and PROPORTION

C. Word Problems



OBJECTIVE:

Apply each or all of the steps in solving a given word problem.

* All answers to be given in simplest form.
* All answers must be labeled.
* Show all work.

OBJ.	SOURCE	WORK TO DO
1	Stars Book	Read Unit I Word Problems, then Read "Information for Objective 1" Do the problems that follow

Information for Objective 1

When using ratios to solve a problem, find out what two things are being compared.

Example: Ralph bought a truck for \$4500 and sold it for \$3300. Express the cost price as a fraction of the selling price.

Since the cost price is being compared to the selling price, the problem will look like this:

$\frac{\text{Cost price}}{\text{Selling price}}$ or $\frac{\$4500}{\$3300}$ which simplifies to 1 4/11

Example: Ralph bought a truck for \$4500 and sold it for \$3300. Express the difference as a fraction of the cost price.

Since the difference in price is not given in the problem, you must find it first before you can compare it to the cost price.

Cost price - Selling price = Difference
\$4500 - \$3300 = \$1200

Difference as fraction of cost is $\frac{\$1200}{\$4500}$ or 4/15

When using proportion to solve a problem, set up the proportion so that the units in the two numerators agree, and the units in the two denominators agree.

Example: A bread recipe calls for 1 package of yeast for every 6 cups of flour. How much yeast is needed if 18 cups of flour are used?

This would be set up as follows:

$\frac{\text{1 package}}{\text{6 cups}} = \frac{\text{N packages}}{\text{18 cups}}$

Notice that both numerators use the unit "package", and both denominators use the unit "cups". To find the missing term ("N packages"), cross-multiply:

$1 \times 18 = 6 \times N$ Then divide and cancel to get N by itself:

$\frac{1 \times 18}{6} = \frac{6 \times N}{6}$ $N = \frac{1 \times 18}{6}$ or N = 3 packages

* ALWAYS REMEMBER TO LABEL THE ANSWER TO A WORD PROBLEM.

REQUIRED REVIEW

REMEMBER

Use the five-step method for solving word problems.

Solve the following word problems, using the five-step method. Be sure to show all of your work and correctly label your answers.

1. 15 eagles, 37 crows, 106 sea gulls, 29 ravens, and 42 hawks flew over the village on Sunday. How many birds flew over the village on Sunday?

2. Mt. McKinley is 20,320 feet high. Mt. Kennedy is 16,286 feet high. How much higher is Mt. McKinley than Mt. Kennedy?

3. The post office sold 85 sheets of 13¢ stamps in 5 days. If each sheet contained 150 stamps, how many 13¢ stamps were sold?

4. A barge made a 1,456 mile trip from Seattle to Kodiak in eight days. What was the average number of miles traveled each day?

5. Mary worked 5/6 hour on Monday, 1/2 hour on Tuesday, and 9/10 hour on Wednesday. How many hours did she work on Monday and Tuesday?

6. In problem 5, how much longer did Mary work on Wednesday than on Monday?

7. An engine uses 2 3/4 gallons of fuel each hour. At that rate how many gallons of fuel would the engine use in 3 2/5 hours?

8. Sixty pounds of berries are to be packed into bags. Each bag will hold 3 3/4 pounds of berries. How many bags will there be?

9. The cost of a plane ticket with the tax included came to $156. Without the tax, the ticket was $144. What fraction of the total price is the price without tax?

10. In problem 9, what fraction of the total price is the tax?

11. In a box of 144 pencils, 20 of them are blue. What fraction of all the pencils are blue?

12. The volleyball team played 16 games and won 10 of them. What is the ratio of games lost to games played?

13. In a jigsaw puzzle, 3/8 of the 424 pieces were missing. How many pieces were missing?

14. In 1968 there were 87 fish camps on Kodiak Island. Now there are 75 fish camps. What is the ratio of fish camps in 1968 to fish camps now?

15. A skiff travels 39 miles on 6 gallons of gas. At that rate, how far could a skiff travel on 10 gallons of gas?

16. A recipe calls for 3 tablespoons of oil for every 1/2 cup of popcorn. How many tablespoons of oil are needed for 4 cups of popcorn?

17. A plane flew 140 miles in 1 hour. How many hours would it take the same plane to fly 90 miles?

18. 21 children came to a party and ate 63 cupcakes. At that rate, how many cupcakes would 28 children have eaten?

19. A car can travel 1,200 miles of the Alaska Highway in about 3 days. At that rate, how far would the car go in 2 days?

20. How much would 12 packs of gum cost if the gum sells at 5 packs for 90¢?

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
I	Refresher Math	p. 521, 6 a-e, 7 a-e
1	Spectrum Blue	p. 72, 1-7, p. 74, 1-6, p. 75, 1-4 p. 76, 1-7, p. 78, 1-8

PROGRESS check A

UNIT 4 - RATIO AND PROPORTION RESULT

TOPIC C - PROBLEM SOLVING CRITERIA 8/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 1. In a class of 18 students 8/9 of them were present. How many students were present?

(2) 2. A hockey team plays 18 games and wins 10. What is the ratio of games lost to games played? Give your answer in simplest form.

(2) 3. If a twelve foot long piece of rope costs $2.16, how much would a 5 foot piece cost?

(2) 4. If 11 acres of land cost $2,255, what will 20 acres cost at the same price?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 4 - RATIO AND PROPORTION RESULT

TOPIC C - PROBLEM SOLVING CRITERIA 7/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

Marks

(2) 1. At one time, haircuts cost 75¢. Now they are $3.00. What is the ratio of the cost of haircuts in the past to the cost now?

(2) 2. During the first 126 games of the season, the football team won 28 games. If this ratio is kept up, how many games will the team win in a total season of 162 games?

(2) 3. Find the cost of the following:

a. 6 packages of gum at 3 for 10¢.

b. 9 bars of soap at 3 for 56¢.

c. 5 cans of beans at 3 for 54¢.

(2) 4. If 3 out of every 8 Cadillacs were recalled because of defects in 1975; how many of the total 5,768 cars were recalled?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

4.

DECI.MALS

TOPICS IN THIS UNIT:

a) READING, WRITING & ROUNDING-OFF

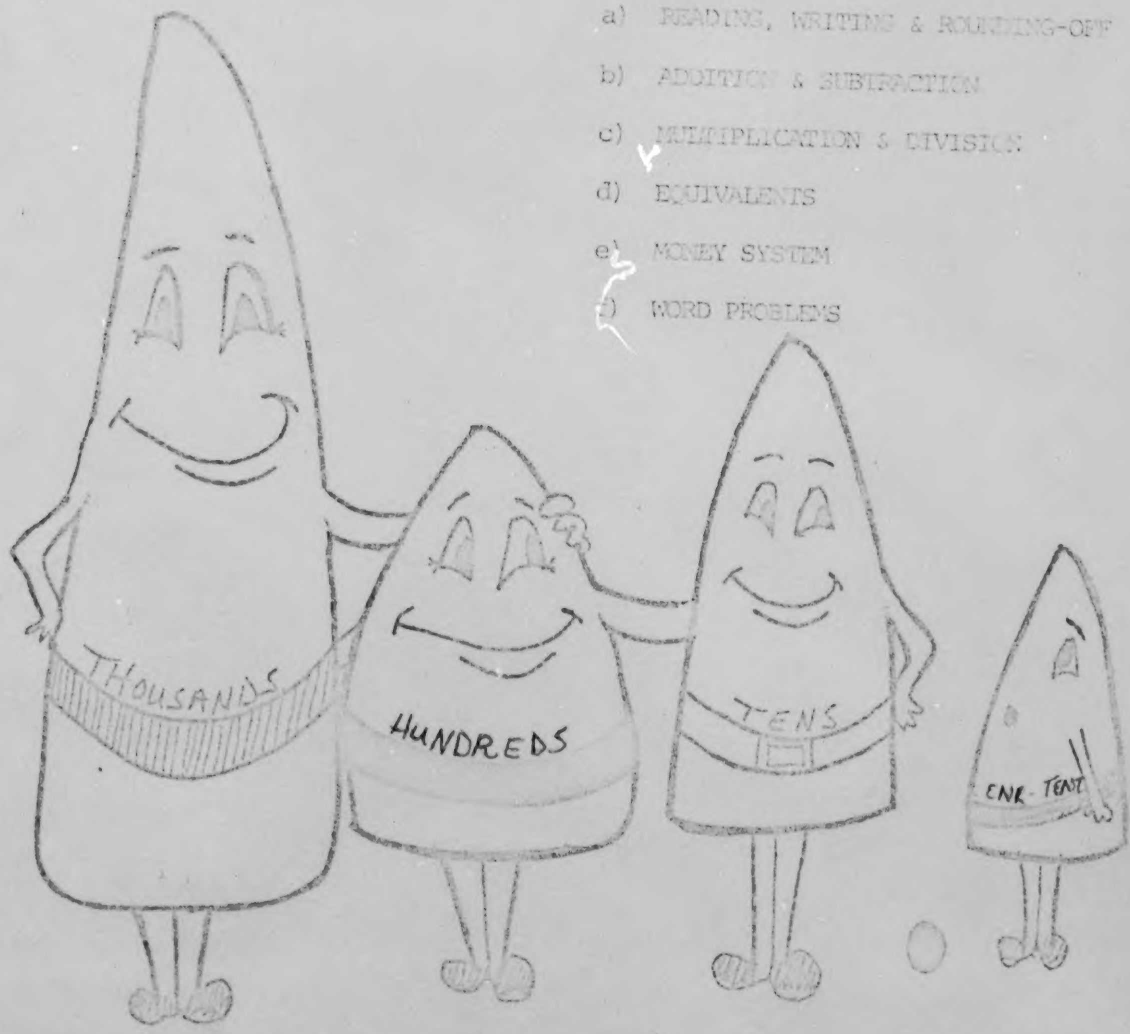
b) ADDITION & SUBTRACTION

c) MULTIPLICATION & DIVISION

d) EQUIVALENTS

e) MONEY SYSTEM

f) WORD PROBLEMS


THOUSANDS
HUNDREDS
TENS
ONE - TENT

Unit 4.

DECIMALS

A. Reading, Writing and Rounding Off

OBJECTIVES:

1. Define a decimal number as a way of naming fractions that have a multiple of 10 as a denominator, such as 1.6 = 6/10.
2. Read given decimal numbers to 10 thousandths as tenths, hundredths, thousandths and ten-thousandths.
3. Write decimal numbers to 10 thousandths from the written name of the number.
4. Arrange a set of decimal numbers in a given order.
5. Round off decimal numbers to nearest tenth, hundredth, thousandth, or ten thousandth.

* Show all work.

BEST COPY AVAILABLE

OBJ	SOURCE	WORK TO DO
1	Math, A Basic Course	Read p 70 Do 1 & 2, p. 70-71
2	Math A Basic Course	Read p. 71-72 Do 4, p 73
3	Math A Basic Course	Read p 70-71, Do 3, p. 73
4	Refresher Math	Read p. 173 do Green Test, p. 173
5	Math A Basic Course	Read p. 73-74 Do 1-4, p 75

RAPID REVIEW

REMEMBER

> When a fraction is written as a decimal fraction, the decimal must have as many places to the right of the decimal as there are zeros in the denominator.

1. Write each of the following decimals as a fraction.

   a. .3 = b. .159 = c. .0098 = d. .091 =

2. Write each of the following common fractions as a decimal.

   a. 7/10 b. 25/100 c. 2 8/10 d. 753/1000

REMEMBER

> WHEN ROUNDING OFF A DECIMAL:
> 1. Look at only the number in the decimal place that is one place to the right of the decimal called for.
> 2. If this next number is 5 or more, make the figure to the left of it one larger.
> 3. Drop all decimals to the right of those required.

3. Round off each decimal to the nearest tenth:

   a. .334 b. .76 c. .99 d. 2.763

4. Round off each decimal to the nearest thousandth:

   a. .8576 b. .35 c. 18.3546 d. .0098

READY? OK, DO PROGRESS CHECK A.
NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

BEST COPY AVAILABLE

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Learning to Compute	Read Red Box, p. 66
2	Learning to Compute	Do p. 68, 58 A Practice Set
	Refresher Math	Do p. 151, Green Test
3	Learning to Compute	Do p. 68, 59 A Practice Set
	Refresher Math	Do p. 152, Green Test
4	Learning to Compute	Do p. 67, 57 A Practice Set
5	Learning to Compute	Read Red Box, p. 74, Do p. 75 65 A practice Set
	Refresher Math	Read p. 155, sample solutions; D p. 156, Green Test

PROGRESS CHECK A

UNIT 3 - DECIMAL NUMBERS

TOPIC A - READING, WRITING AND ROUNDING OFF

RESULT

CRITERIA 11/11

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

(1) 1. Define "decimal numbers" and give an example.

____

(3) 2. Write the word name for these numbers.

a. .3 ____________

b. 5.05 ____________

c. 56.472 ____________

(4) 3. Write these in decimal numbers.

a. seven-tenths ____________

b. six and six-tenths ____________

c. seventy-two thousandths ____________

d. one hundred five and forty-hundredths ____________

(1) 4. Which is the larger of these numbers?

0.46 .046 ____________

(2) 5. Round off 9.5726 to the nearest:

a. tenth ____________

b. thousandth ____________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 3 - DECIMAL NUMBERS　　RESULT

TOPIC A - READING, WRITING AND ROUNDING OFF　　CRITERIA 10/11

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

(1) 1. Define a decimal number by completing this sentence:

A decimal number is ______________________________

____.

(3) 2. Write the word name for these numbers.

a. .1 ____________________

b. 3.65 ____________________

c. 29.502 ____________________

(4) 3. Write these as decimal numbers.

a. nine-tenths ____________________

b. twelve and five-tenths ____________________

c. fifty-six hundredths ____________________

d. twenty-two and two hundred sixty-nine thousandths

____

(1) 4. Arrange these in order from smallest to largest.

0.892, 8.92, 0.982, 98.2

______, ______, ______, ______

(2) 5. Round off 8.157 to the nearest:

a. tenth ____________________

b. hundredth ____________________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 4.

DECIMALS

B. Addition and Subtraction

OBJECTIVES:

1. Arrange a set of decimal numbers with different decimal places so that they can be added vertically by proper place value.
2. Calculate sums of given decimal numbers and round off, if required.
3. Calculate differences of given pairs of decimal numbers and round off if required.

* Show all work.

OBJ.	SOURCE	WORK TO DO
1,2	Math, A Basic Course	REad p. 83-84, Do p. 84, 1 & 2
3	Math, A Basic Course	Read p. 84-85, Do p. 85-86, 1 & 2
4	Math, A Basic Course	Do p. 86, 3-11

RAPID REVIEW

REMEMBER

TO ADD OR SUBTRACT DECIMAL NUMBERS:
1. The numbers are arranged in a vertical column with the decimal points directly below one another.
2. Then add or subtract in the same way as whole numbers.

1. Add each of the following decimal fractions:

a. 4.2 b. 45.89 c. 4.56 d. 24
+5.3 +2.6 +.389 + .831

2. Subtract each of the following decimal fractions:

a. .73 b. 41.38 c. 6.413 d. 68.2
-.42 -2.47 -1.28 - 1.539

READY? DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1,2	Learning to Compute	Read red box, p. 78, Do p. 78 Inventory Test 68 (1 & 2)
2	Spectrum Green	Do p. 99, 1-8
3	Learning to Compute	Read red box, p. 79, Do p. 80 Practice Set 69 A (1-5)
3	Spectrum Green	Do p. 103, 1-7
4	Spectrum Green	Do p. 98, 1-8, p. 100, 1-8 p. 102, 1-7, p. 104, 1-5

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PROGRESS CHECK A

UNIT 3 - DECIMAL NUMBERS

RESULT

TOPIC B - ADDITION AND SUBTRACTION

CRITERIA 12/12

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

(4) 1. Add the following:

a.
$$\begin{array}{r} 3.407 \\ 0.003 \\ 4.080 \\ +\ \underline{2.510} \end{array}$$

b.
$$\begin{array}{r} .06 \\ .70 \\ +\ \underline{3.02} \end{array}$$

c. .7 + .03 + 1.0 = ____________________

d. 13.1 + 1.32 + 132.0 = ____________________

(4) 2. Subtract the following:

a.
$$\begin{array}{r} 1.7345 \\ -\ \underline{.6346} \end{array}$$

b.
$$\begin{array}{r} 8.091 \\ -\underline{.809} \end{array}$$

c. 11.01 - .92 = ____________________

d. 10.00 - 9.99 = ____________________

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 3. A.B. Lee traveled 33.4 miles, 122.89 miles and 10.05 miles in three days. How far did he travel all together?

(2) 4. A firecracker rocket reached a height of 247.33 feet above the earth's surface before it exploded. If the fireballs fell to 158.35 feet above the earth's surface before they were completely extinguished, how many feet did they travel while burning?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 3 - DECIMAL NUMBERS | RESULT

TOPIC B - ADDITION AND SUBTRACTION | CRITERIA 9/10

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

(3) 1. Add the following:

a.	32.403	b.	.92	c.	.3 + .07 + 3.12 =
	8.92		.05		
	122.566		+.03		______________
	+ 12.333				

(3) 2. Subtract the following:

a.	3.9898	b.	0.0010	c.	13.42 - 4.38 =
	-2.9999		- 0.0003		______________

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 3. George Jackson ran three 100 yard dashes in 9.8, 10.2, 9.9 seconds. At a later date he ran a 300 yard dash in 30.5 seconds. How much less time did it take him to run 300 yards when he ran the three 100 yard dashes than the one 300 yard dash?

(2) 4. Bill has a compact car and John has a big car. On a trip the small car used 25.9 quarts of gas and the big car used 39.3 quarts. How much more gas did the big car use?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 4.

DECIMALS

C. Multiplication and Division

.008)‾.0024
4)‾.64
.005)‾75
43.1 x 7
1.12 x 1.7
342.32 x .7
.03)‾.6
.23 x 6
27.9)‾34.776
.10 x25

OBJECTIVES:

1. Calculate products of decimal numbers and round off if required.

2. Calculate quotients to a given number of decimal places when dividing by a whole number and:
   (a) a smaller whole number
   (b) a larger whole number
   (c) a decimal number

3. Calculate quotients to a given number of decimal places when dividing by a decimal number.

* Show all work.

OBJ.	SOURCE	WORK TO DO
1	Math, A Basic Course	Read p. 88, Do p. 89, problems a-0 Read p. 89-90, Do p. 90,prob. 1 & 2
2	Math, A Basic Course	Read p. 92, Do p. 93, prob. 1a-t
3	Math, A Basic Course	Read p. 93 & 94, Do p. 94, prob. a-o
4	Math, A Basic Course	Read p. 95-98, Do p. 98-99,prob.1,2,3
5	Math, A Basic Course	Read p. 99-100,Do p. 100-101,prob.1a-2
6	Math, A Basic Course	Do p. 100-101, problems 2-11

RAPID REVIEW

REMEMBER

****

1. Multiply a decimal as you would a whole number.
2. Then begin at the right of the product and point off as many decimal places as there are.

****

1. Multiply the following decimals:

a. .23 x 6   b. 43.1 x 7   c. 42 x.8   d. 32 x.3   e. .734 x .9

f. 2.16 x .6   g. .42 x.006   h. 8.06 x.003   i. 687 x.03   j. 2.04 x .6

REMEMBER

****

WHEN DIVIDING BY A DECIMAL:
1. Move the decimal point of the divisor to the right of the last digit.
2. Move the decimal point of the dividend to the right the same number of places, using zeros if necessary.
3. Place the decimal point in the quotient directly above the one in the dividend.

****

2. Divide the following decimals:

a. 4).64   b. 2)3.6   c. 6).0084   d. .8)9.6

e. .6)2.16   f. .4).0136   g. .005)75   h. .03).6

READY? OK, DO PROGRESS CHECK A.
NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Spectrum Green	Do p. 106, 1-9 Do p. 107, 1-12 Do p. 108, 1-12 Do p. 109, 1-7 Do p. 110, 1-7 Do p. 111, 1-8 Do p. 113, 1-5
3	Spectrum Green	Do p. 117, 1-3
4	Spectrum Green	Do p. 119, 1-3 Do p. 121, 1-3 Do p. 122, 1-4 Do p. 123, 1-5 Do p. 125, 1-4 Do p. 127, 1-3
6	Spectrum Green	Do p. 118,120,124,126, & 128

PROGRESS CHECK A

UNIT 3 - DECIMAL NUMBERS RESULT

TOPIC C - MULTIPLICATION AND DIVISION CRITERIA 12/12

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

(3) 1. Multiply the following: Show your work.

a. 3.04 × .19 b. 0.025 × .0334 c. 193.2 × 8.76

$$\text{a. }\begin{array}{r} 3.04 \\ \times\ .19 \\ \hline \end{array} \qquad \text{b. }\begin{array}{r} 0.025 \\ \times.0334 \\ \hline \end{array} \qquad \text{c. }\begin{array}{r} 193.2 \\ \times 8.76 \\ \hline \end{array}$$

(5) 2. Divide the following, give answers to 3 decimal places. Show your work.

a. 21.7$\overline{)\ 347.2}$ b. .005$\overline{)\ .0105}$

c. 88$\overline{)\ 352.88}$ d. 35.7$\overline{)\ 1.5351}$

e. 12$\overline{)\ 8.}$

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 3. Air Canada flew a jet for 30.25 hours at an average speed of 60.6 miles per hour. What was the total distance traveled? (give answer to 2 decimal places)

4. A.B. Earth dug a well 28.91 feet deep. If water poured into the well at a rate of 7.7 feet per hour, how long would it take before the well was full? Give answer to 3 decimal places.

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 3 - DECIMAL NUMBERS | RESULT

TOPIC C - MULTIPLICATION AND DIVISION | CRITERIA 10/12

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

(3) 1. Multiply the following: Show your work.

a. $\begin{array}{r} 8.123 \\ \underline{\times 4.567} \end{array}$ b. $\begin{array}{r} 9.023 \\ \underline{\times\ .035} \end{array}$ c. $\begin{array}{r} 121 \\ \underline{\times .10} \end{array}$

(5) 2. Divide the following: Show your work. Give answer to 3 decimal places.

a. $11.9\overline{)\ 3.213}$ b. $18\overline{)\ .09}$

c. $.086\overline{)\ 7826}$ d. $48\overline{)\ 158.4}$

e. $100\overline{)\ .45}$

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 3. The fuel burned by a certain plane is 45.6 gallons each hour. How many hours can the plane fly if its tank holds 200 gallons? Give your answer to the nearest tenth of an hour.

4. An electric iron uses 3.2 kilowatts of electricity every hour it is used. If electricity costs 7.5 cents for each kilowatt hour, what will it cost to use the iron for 3 hours? (Round off your answer to the nearest cent.)

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 4.

DECIMALS

D. Equivalents

OBJECTIVES:

1. Change common fractions and mixed numbers to decimal numbers by dividing the numerator by the denominator.
2. Change decimal numbers to fractions by writing with the correct multiple of 10 as denominator and then finding simplest terms.

* Show all work.

OBJ.	SOURCE	WORK TO DO
1	Math, A Basic Course	Read p. 80, Do p. 81
2	Math, A Basic Course	Read p. 78, Do p. 79

RAPID REVIEW

REMEMBER

> TO CHANGE A COMMON FRACTION TO A DECIMAL FRACTION:
> 1. Place a decimal point after the numerator adding zeros if necessary.
> 2. Divide the numerator by the denominator.

1. Change the following common fractions to decimal fractions. (Round off to the nearest tenth.)

a. 1/4 b. 1/2 c. 3/5 d. 6/7 e. 3/10 f. 1/100

g. 5/25 h. 3/7 i. 25/30 j. 6/25 k. 9/23 l. 5/9

REMEMBER

> TO CHANGE A DECIMAL FRACTION TO A COMMON FRACTION:
> 1. Take out the decimal point.
> 2. Write the decimal number as the numerator of the fraction.
> 3. For the denominator write the number as shown by the name of the last decimal place.
> 4. Reduce to lowest terms.

2. Change the following decimals to fractions. (Reduce to lowest terms.)

a. .3 b. .5 c. .25 d. .0005 e. .9

f. 1.5 g. 3.625 h. .0075 i. 5.8 j. .0001

READY? DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Refresher Math	Read p. 200, Do green test p. 200 practice what you miss
2	Refresher Math	Read p. 203, Do green test p. 204 practice what you miss

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PROGRESS CHECK A

UNIT 3 - DECIMAL NUMBERS RESULT

TOPIC D - EQUIVALENTS CRITERIA 12/16

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

(4) 1. Change to decimal numbers:

a. 8/10 ________ c. 9/15 _______

b. 1 2/5 ________ d. 56/80 ______

(4) 2. Change to common fractions or mixed numbers in simplest form.

a. .8 _________ c. 5.64 ___________

b. 1.25 ________ d. .03 ___________

(4) 3. Do these:

a. 5 1/2 + 2.25 = ______________________________

b. 10.05 - 5 2/5 = ______________________________

c. 1/4 of 96 = ______________________________

d. Which is larger: 3/8 inch or .351 inch? ___________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 3 - DECIMAL NUMBERS
RESULT
TOPIC D - EQUIVALENTS
CRITERIA 10/16

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOKS.

(4) 1. Change to decimal numbers:

a. 3/10 ____________
c. 14/25 ____________
b. 1 1/5 ____________
d. 5/12 ____________

(4) 2. Change to common fractions or mixed numbers in simplest form.

a. .4 ____________
c. 2.42 ____________
b. 1.75 ____________
d. .05 ____________

(4) 3. Do these:

a. 3.25 x 1 1/4 = ______________________________
b. 97 1/2 - 7.5 = ______________________________
c. 4/5 of 190 = ______________________________
d. Which is smaller: .55 inch or 7/16 inch? ____________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 4.

DECIMALS

E. Money System

OBJECTIVES:

1. Read and write numbers stating value in dollars and cents.
2. State the value of given combinations of cents, nickels, dimes, quarters and dollars.
3. Equate given money values to number of dollars, quarters, dimes nickels and cents.

* All answers must be labeled.

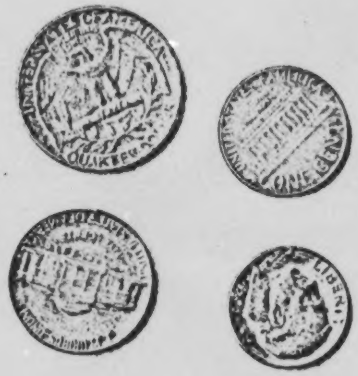
* Show all work.

OBJ.	SOURCE	WORK TO DO
1,2,3	Spectrum Red	Do p. 72, 73, 74
1,2,3	Spectrum Orange	Do p. 75, 76, 77, 78

REQUIRED REVIEW

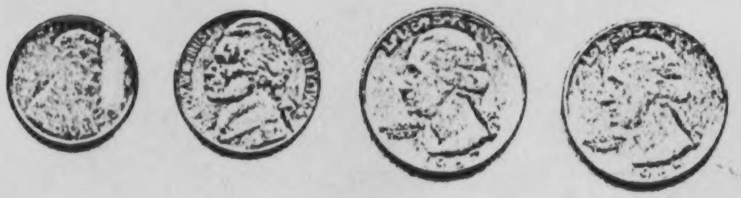
1. State the value of the following groups of coins:

a.

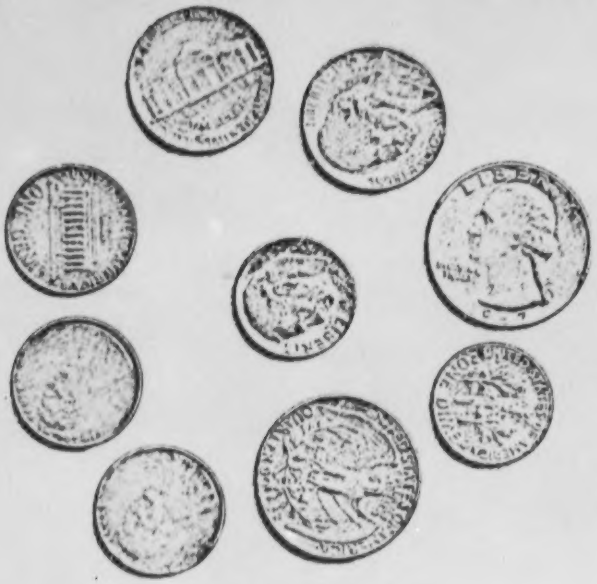


______________¢

b.



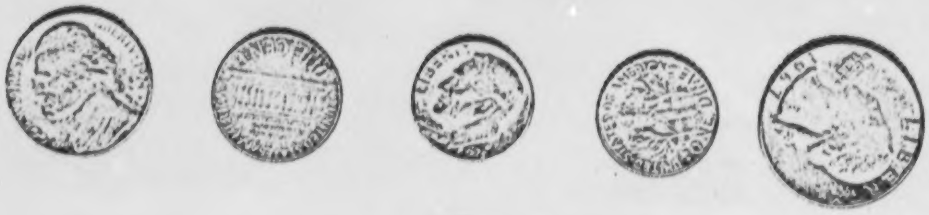
______________¢



c.

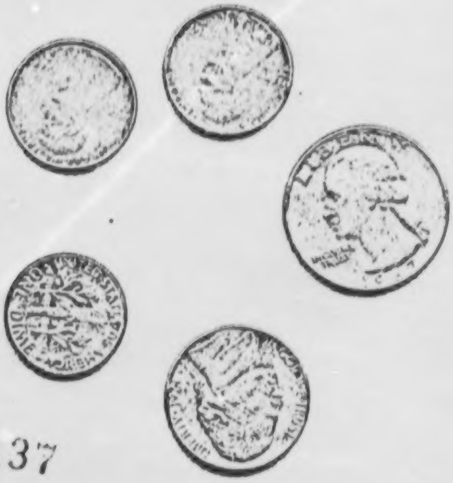
______¢

d.



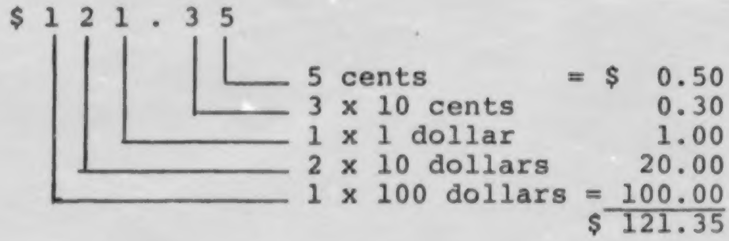
______¢

e.



______¢

Money is ALWAYS carried to two decimal places. See the following diagram:



$ 1 2 1 . 3 5
5 cents = $ 0.50
3 x 10 cents 0.30
1 x 1 dollar 1.00
2 x 10 dollars 20.00
1 x 100 dollars = 100.00
$ 121.35

Exercise

2. Break up the following amounts of money as shown in the example below:

$21.47 = $20.00 + $1.00 + $0.40 + $0.07

a. $41.47 c. $5.40

b. $11.95 d. $45,276.88

3. A. State the amount of change you would give a customer in return for $1.00 if he bought goods for:

a. 77¢ b. 84¢ c. 53¢

B. State the amount of change in return for $2.00 if the customer bought goods for:

a. $1.14 b. $0.99 c. $1.27

4. State the amount of change in each of these cases:

Example: $1.22 from $5 = $3.78

a. $4.55 from $10 c. $11.98 from $20

b. $1.66 from $2 d. $9.91 from $20

RAPID REVIEW

REMEMBER

> TO ADD OR SUBTRACT MONEY:
> 1. The numbers are arranged in a vertical column with the decimal points directly below one another.
> 2. Add or subtract in the same way as whole numbers.

1. Add the following amounts of money:

a. $\begin{array}{r} \$5.95 \\ + \ .40 \\ \hline \end{array}$ b. $\begin{array}{r} \$7.98 \\ +2.49 \\ \hline \end{array}$ c. $\begin{array}{r} \$2.09 \\ + \ .49 \\ \hline \end{array}$ d. $\begin{array}{r} \$1.49 \\ 6.96 \\ 7.00 \\ + \ 3.39 \\ \hline \end{array}$

2. Subtract the following amounts of money:

a. $\begin{array}{r} \$6.98 \\ - \ 1.49 \\ \hline \end{array}$ b. $\begin{array}{r} \$5.00 \\ - \ .99 \\ \hline \end{array}$ c. $\begin{array}{r} \$10.00 \\ - \ 6.98 \\ \hline \end{array}$ d. $\begin{array}{r} \$100.00 \\ - \ 49.95 \\ \hline \end{array}$

REMEMBER

> TO MULTIPLY MONEY:
> 1. Multiply as you would a whole number.
> 2. Then begin at the right of the product and point off as many decimal places as there are.

3. Multiply the following:

a. $\begin{array}{r} \$1.49 \\ \times \ 6 \\ \hline \end{array}$ b. $\begin{array}{r} \$29.95 \\ \times \ 14 \\ \hline \end{array}$ c. $\begin{array}{r} \$9.98 \\ \times \ 33 \\ \hline \end{array}$ d. $\begin{array}{r} \$5.00 \\ \times \ 25 \\ \hline \end{array}$

REMEMBER

> WHEN DIVIDING MONEY:
> 1. Move the decimal point of the divisor to the right of the last digit.
> 2. Move the decimal point of the dividend to the right the same number of places, using zeros where necessary.
> 3. Place the decimal point in the quotient directly above the one in the dividend.

4. Divide the following:

a. $5\overline{)\$5.95}$ b. $\$.45\overline{)\$2.70}$ c. $\$1.55\overline{)\$17.05}$

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

In making change, you should try to give your customer as few coins as possible.

Suppose a customer bought 67¢ worth of goods which he paid for with a one dollar bill. Keep the dollar bill in your hand or on top of the cash drawer until you have given out the change.

You should give him change as follows:

67¢ + 3¢ (3 pennies) = 70¢
70¢ + 5¢ (1 nickel) = 75¢
75¢ + 25¢(1 quarter) = $1.00

You have used 3 + 1 + 1 = 5 coins.

You have given 3¢ + 5¢ + 25¢ = 33¢ in change.

Do the following exercises:

5. State the least number of coins and bills you give for these amounts of money.

   Example: $2.21---$2 + 2 dimes + 1 penny----1 bill and 3 coins

   a. 65¢
   b. 37¢
   c. $1.19

6. List the coins and bills you would give in change for $1.00 if a customer bought goods for the following:

   Example: $0.84: 1¢, 5¢ and 10¢

7. List the coins and bills you would give in change for the following:

   Example: $1.45 from $10--5¢, 25¢, 25¢, $2, $1, and $5

   a. $2.17 from $10
   b. $11.23 from $20
   c. $14.04 from $20

8. Goldie bought 3 pairs of gloves at $1.19 per pair. She paid with a $10 bill. How much change did she receive?

9. Jerry went to the store to buy some groceries. He had $7.61 in his wallet. He found that he was $2.33 short. How much did his groceries cost?

PROGRESS CHECK A

UNIT 4 - DECIMAL NUMBERS RESULT

TOPIC D - MONEY SYSTEM CRITERIA 4/4

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

(1) 1. Write "seven dollars and seventy-five cents" in numbers.

____

(1) 2. What combination of exact change would you use to pay a bill of $4.79?

___dollars, ___quarters, ___dimes, ___nickels, ___pennies.

__Problems:__ Show the work you do to solve the problem. One mark is for your work, and one mark is for the correct answer.

(2) 3. In a sale, toothpaste is selling at 1/3 off. If the original price is 69¢ a tube, what will it cost you for 6 tubes at the sale price?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER __BEFORE__ YOU GO ON.

PROGRESS CHECK B

UNIT 4 - DECIMAL NUMBERS RESULT

TOPIC D - MONEY SYSTEM CRITERIA 4/4

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

(1) 1. Write "five dollars and sixty-three cents" in numbers.

____

(1) 2. What combination of exact change would you use to pay a bill of $3.95?

___dollars, ___quarters, ___dimes, ___nickels, ___pennies.

Problem: Show the work you do to solve the problem. One mark is for your work, and one mark is for the correct answer.

(2) 3. What will two tires cost if the first tire is $34.90 and the second is bought at half price?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

Unit 4.

DECIMALS

F. Word Problems

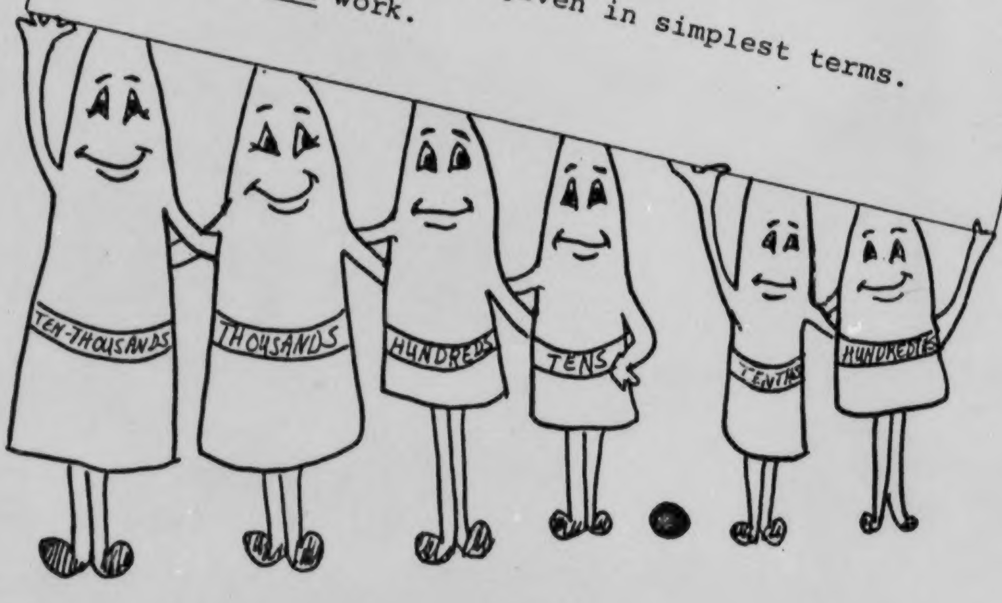
OBJECTIVES:

1. Apply the five steps in solving word problems.

* All answers must be labeled.

* All answers to be given in simplest terms.

* Show all work.


TEN-THOUSANDS
THOUSANDS
HUNDREDS
TENS
TENTHS
HUNDREDTHS

REQUIRED REVIEW

1. Tim bought 10 packages of gum for 15¢ a package and 4 candy bars for 20¢ a piece. How much did he spend altogether?

2. Tina spent 99¢ at the grocery store and Larry spent 69¢. How much more did Tina spend than Larry?

3. Fred's mother gave him 99 pencils to be divided among the 19 students in his class at school. How many pencils did each student get?

4. Ralph caught four Dolly Varden. The weight of each is as follows: 1 3/4 lb., 3 1/8 lb., 5 1/2 lb., and 3 3/8 lb. What was the total weight of all of the Dolly Varden?

5. A plane flying at 250 miles per hour encounters a head wind that slows it to 2/3 of its original speed. How fast is the plane flying now?

6. If a plane flies 560 miles in 1 3/4 hours, what is its average ground speed?

7. Ted bought a pair of ice skates at a sale price of $10. What was the regular price of the skates if they were reduced by 1/3?

8. A mixture used to make concrete contains 1 part cement, 2 parts sand, 4 parts gravel, and water. If 4 bags of sand are used, how many bags of cement and bags of gravel are required?

9. What is the ratio of a nickel to a quarter?

10. Jane missed 5 examples in an arithmetic test of 25 examples. What part of the test did she get right?

11. The weather bureau reported that the total rainfall for the first 7 months of 1977 was 33.6 in. During the five times in rained in August, 1.02 in., 2 in., 1.6 in., 0.58 in., and 0.4 in. of rain fell. What is the total rainfall at the end of the first 8 months?

12. The Friday night movie made the following sales; $55.00 admission, $7.75 on popcorn, $8.55 on pop, and $3.05 on candy sales. How much did they make on sales altogether?

13. Elmer's father chartered a plane to town. The plane cost $395.78. While in town his father spent $265.99 on groceries, $178.80 on clothes and $249.95 on a new gun. How much did he spend?

14. David made $9,786.52 fishing last summer. He had to pay $1,438.19 out for taxes. How much did he have left?

15. How much change should you receive from a:
    a. $1 bill if you owe $.59?
    b. $5 bill if you owe $1.89?
    c. $10 bill if you owe $.97?
    d. $10 bill if you owe $8.45?

16. An airplane has a ground speed of 325 knots. What is its speed in statute miles if one knot = 1.15 m.p.h.?

17. A plane on a flight used 43.8 gallons of gasoline per hour. If its flight lasted 4.5 hours, how many gallons of gasoline were used?

18. At $.33 per lb., how many pounds of apples can you buy for $1.98?

19. A store charged $5.12 for a package of hamburger at $1.28 a pound. How many pounds of hamburger were there?

20. If 6 dozen pencils cost $4.32, what will one pencil cost?

PROGRESS CHECK A

UNIT 3 - DECIMAL NUMBERS RESULT
TOPIC E - PROBLEM SOLVING CRITERIA 8/8

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 1. A piece of lumber is .008 feet thick. If a bundle of lumber contains 24 of these pieces, how thick is the bundle?

(2) 2. A rope 12.7 feet long was divided into 4 equal parts. What was the length of each part.

(2) 3. During a series of flights a pilot flew a plane for the following distances, 327.8 miles, 154 miles, 624.2 miles, 458.4 miles and 249.6 miles. What was the total number of miles the pilot flew?

(2) 4. A piece of metal 41.54 feet long became .005 feet shorter during cold weather. What was its new length?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 3 - DECIMAL NUMBERS RESULT

TOPIC E - PROBLEM SOLVING CRITERIA 7/8

WORK YOUR PROBLEMS IN YOUR EXERCISE BOOK.

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 1. A tank when .6 full contains 10.8 quarts. How much will it contain when it is .8 full?

(2) 2. A dealer buys 72 dresses, each of which costs $3.75. How much does he pay for the dresses?

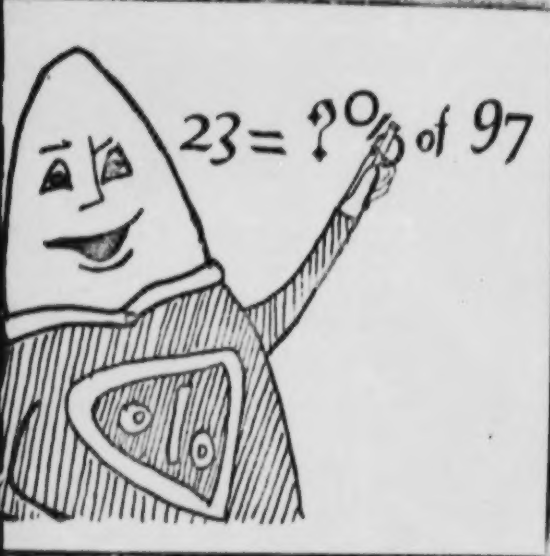
(2) 3. A dealer purchased 8 boxes of candy for $8.16. If each box contained 12 candy bars, what was the cost of each bar?

(2) 4. A sailor travels the following distances during a 5 day period: 105.2 miles, 94.7 miles, 153.5 miles, 57.9 miles, and 174.8 miles. How many miles has he traveled after the 5 days?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

5. PERCENT

14 is ______% of 812



Percent
MAN

TOPICS IN THIS UNIT:

a) READING, WRITING & EQUIVALENTS
b) OPERATIONS
c) COMPUTATION REVIEW

Unit 5.

PERCENT

A. Reading and Writing

OBJECTIVES:

1. Read numbers in percent notation.
2. Use the symbol (%) correctly.
3. Identify a percent as a fraction with a denominator of 100.
4. Change percents to decimal numbers.
5. Change decimal numbers to percents.
6. Change percents to common fractions or mixed numbers in lowest terms.
7. Change common fractions or mixed numbers to percents.

* Show all work.

OBJ.	SOURCE	WORK TO DO
1,2,3	Math, A Basic Course	Read p. 105
4	Refresher Math	Read p. 223 Do p. 223, Green Test
5	Refresher Math	Read p. 225 Do p. 225, Green Test
6	Refresher Math	Read p. 227 Do p. 227, Green Test
7	Refresher Math	Read p. 229, Procedures 1a & 2a, and study sample solutions on p. 229 & 230, Do p. 230, Green Test

RAPID REVIEW

REMEMBER

1. A percent is a fractional number whose denominator is 100.

$$87\% = \frac{87}{100}$$

2. A percent is changed to a decimal number by dropping the % sign and moving the decimal two places to the left.

1. Change 52% to a decimal number.

REMEMBER

A decimal number is changed to a percent by moving the decimal point two places to the right and adding the % sign.

2. Change 1.24 to a percent.

REMEMBER

A percent is changed to a fraction by placing the number over 100, dropping the % sign, and putting the fraction in simplest terms.

3. Change 64% to a fraction in lowest terms.

REMEMBER

1. A common fraction is changed to a percent by dividing the numerator by the denominator, moving the decimal two places to the left, and adding the % sign.
2. A mixed number is changed to a percent by first changing it to an improper fraction, and then following the same steps as in (1) above.

4. a. Change 5/8 to percent

   b. Change 2 3/5 to percent

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

CHK.	OBJ.	SOURCE	WORK TO DO
	1,2,3	Spectrum Green	p. 131, 1-14
		" Blue	p. 81, 1-14
		" Purple	p. 57, 1-14
	4	Spectrum Green	p. 133, 1-6
		" Blue	P. 86, 1-8, p. 87, 1-11, p. 88, 1b-15b
		" Purple	p. 59, 16-86
	5	Spectrum Green	p. 133, 7-12
		" Blue	p. 85, 1-10, p. 88, 1a-15a
		" Green	p. 59, 1a-8a
	6	Spectrum Green	p. 132, 1-5
		" Blue	p. 83, 1-11, p. 84, 5-12
		" Purple	p. 58, 6-10
	7	Spectrum Green	p. 132, 6-10
		" Blue	p. 82, 1-8, p. 84, 1-4
		" Purple	p. 58, 1-5

PROGRESS CHECK A

UNIT 5 - PERCENT RESULT

TOPIC A - READING, WRITING AND EQUIVALENT CRITERIA 20/20

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(1) 1. Write the word name for the symbol 5%. ________________

(1) 2. If you have a fraction with a denominator of 100 and write it without the denominator, you can then express the numerator as a:

____

(1) 3. 8% means (check one).

8/100 ___, 80/100 ___, 8/10 ___, 1/8 ___.

(1) 4. 100% of something means ________________

(4) 5. Change to decimal fractions:

a. 40% ________________ c. 125% ________________

b. 1 1/2 % ________________ d. 58% ________________

(4) 6. Change to percents:

a. .56 ________________ c. .075 ________________

b. 1.27 ________________ d. .875 ________________

(4) 7. Change to common fractions or mixed numbers in simplest form:

a. 60% ________________ c. 25% ________________

b. 12 1/2% ________________ d. 175% ________________

(4) 8. Change to percents:

a. 2/3 = ________________ c. 21/25 = ________________

b. 1/2 = ________________ d. 1 5/8 = ________________

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 5 - PERCENT RESULT

TOPIC A - READING, WRITING AND EQUIVALENT CRITERIA 18/20

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(1) 1. 5% means (check one):

5/10_____, 5/100 _____, 50/100 ____, 1/5 _____.

(1) 2. Write the word name for the symbol 60%.____________________

(1) 3. Percent means (check one):

per 100 ____, 100 ____, 1/100 ____, 1/10 ____

(1) 4. 50% of something means (check one):

all of it ____, 1/2 of it ____, 50 times it ____.

(4) 5. Change to decimal fractions.

a. 50% ______________ c. 110% ____________

b. 2 3/4 %____________ d. 47% ____________

(4) 6. Change to percents.

a. .32 _____________ c. .025 ____________

b. 2.35 ____________ d. .625 ____________

(4) 7. Change to common fractions or mixed numbers in simplest form.

a. 70% _____________ c. 75% ____________

b. 37 1/2% _________ d. 225% ____________

(4) 8. Change to percents.

a. 1/3 = ___________ c. 31/50 = ________

b. 1 1/4 = _________ d. 5/8 = ________

Unit 5

PERCENT

B. Operations

OBJECTIVES:

1. Find a percent of a number.

   50% of 4 = __?__

2. Find what percent one number is of another.

   2 is __?__ % of 4

3. Find a number when a percent of it is given.

   50% of __?__ = 2

* All answers to be given in simplest terms.

* All answers must be labeled.

OBJ.	SOURCE	WORK TO DO
1	Refresher Math	Read p. 232-233 Do p. 233, Green Test
2	Stars Book Refresher Math	Read "Information for Objective 2" then Do p. 241, Green Test
3	Stars Book Refresher Math	Read "Information for Objective 3", then Do p. 247, Green Test

Information for Objective 2

When finding what percent one number is of another:

1. Make a fraction out of the two given numbers and reduce the fraction if possible. (The denominator will always be the number that follows the word "of" in the problem.)
2. Divide the numerator by the denominator.
3. Move the decimal point two places to the right and add the % sign.

Example: 27 is what percent of 36?

$$\frac{27}{36} = \frac{3}{4} \qquad 3 \div 4 = .75 = \underline{\underline{75\%}}$$

Example: What percent of 48 is 30?

$$\frac{30}{48} = \frac{5}{8} \qquad 5 \div 8 = .62\ 1/2 = \underline{\underline{62\ 1/2\%}}$$

Now do p. 241, Green Test, in Refresher Math.

Information for Objective 3

When finding a number when a percent of it is known:

1. Change the percent to a decimal number.
2. Divide the other number in the problem by this decimal number.

Example: 16% of what number is 48?

$$16\% = .16 \qquad 48 \div .16 = \underline{\underline{300}}$$

Now do p. 247, Green Test, in Refresher Math.

RAPID REVIEW

REMEMBER

WHEN FINDING A PERCENT OF A NUMBER:

1. Change the percent to a decimal.
2. Multiply the given number by this decimal.

1. Find 25% of 75.24.

REMEMBER

WHEN FINDING WHAT PERCENT ONE NUMBER IS OF ANOTHER:

1. Make a fraction out of the two given numbers and reduce the fraction if possible. (The denominator will always be the number that follows the word "of" in the problem.)
2. Divide the numerator by the denominator.
3. Move the decimal point two places to the right and add the % sign.

2. a. 3 is what percent of 5?

   b. What percent of 4 is 1?

REMEMBER

WHEN FINDING A NUMBER WHEN A PERCENT OF IT IS KNOWN:

1. Change the percent to a decimal number.
2. Divide the other number in the problem by this decimal number.

3. 44 is 55% of what number?

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

Unit 6.

CONSUMER MATH

B. Savings Account

OBJECTIVES:

1. Name the different types of savings accounts.
2. Fill out a deposit slip correctly.
3. Be able to keep accurate records of the savings account in the pass book.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Spectrum Green	P. 135, 1-10, p. 137, 1-10
	Spectrum Blue	p. 93, 1-10
	Spectrum Purple	p. 61, 1-10
2	Spectrum Blue	p. 95, 1-8
	Spectrum Purple	p. 63, 1-10
3	Spectrum Blue	p. 97, 1-9
	Spectrum Purple	p. 65, 1-10

PROGRESS CHECK A

UNIT 5 - PERCENT

TOPIC B - OPERATIONS

RESULT

CRITERIA 15/15

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(9) 1. Calculate the following:

a. 5% of 60 = _____

b. 1 1/2% of 75 = _____

c. 150% of 56 = _____

d. 24 is _____% of 30

e. 75 is _____% of 150

f. 120 is _____% of 80

g. 10% of_____ = 20

h. 175% of_____ = 70

i. 20% of_____ = 55

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 2. If you got32 questions correct out of 40 on a test, what percent did you get correct?

(2) 3. How much interest would you earn for a year on $120 at interest of 3 1/2% per year?

(2) 4. A retailer bought a stove for $300 wholesale. If he wants to sell it at a price which will make this wholesale price 80% of the selling price, what price must he charge?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 5 - PERCENT
RESULT

TOPIC B - OPERATIONS
CRITERIA 13/15

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks

(9) 1. Calculate the following:

a. 3% of 70 = _____

b. 3 1/2% of 125 = _____

c. 160% of 110 = _____

d. 64 is _____% of 80

e. 75 is _____% os 1500

f. 10 is _____% of 6

g. 5% of _____ = 13

h. 33 1/3% of _____ = 16

i. 1/2% of _____ = 2

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 2. If you ate 8 oranges of a dozen (12), what percent did you eat?

(2) 3. A salesman works on a commission of 5%. If he sold $1,200 worth of goods, how much did he earn?

(2) 4. A pair of shoes are selling on sale for $24. Calculate the regular price of these shoes before they went on sale if the sale price is 75% of the regular price.

Unit 5.

PECENT

C. Word Problems

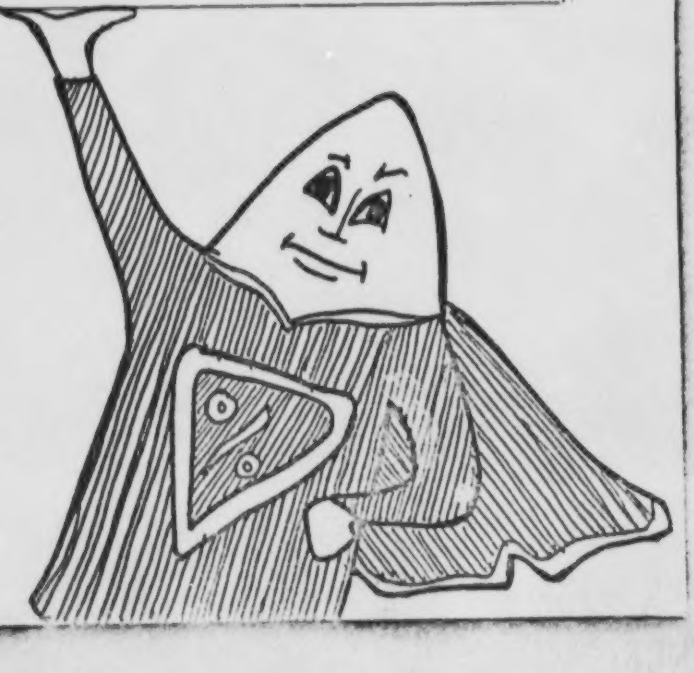
OBJECTIVE:

1. Apply each or all of the steps in solving a given word problem.

   *All answers to be given in simplest terms.

   *All answers must be labeled.

   * Show all work.



REQUIRED REVIEW

REMEMBER

****

Use the five step method for solving word problems.

****

1. Phillip's mother bought eight cans of green beans at 32¢ a can. If she paid for the green beans with a $5 bill, how much change did she get back?

2. Walter kept track of the number of students who ate lunch at school last week, and found that there were 26 on Monday, 28 on Tuesday, 20 on Wednesday, 21 on Thursday, and 25 on Friday. What was the total number of students eating lunch at school last week?

3. Tim made a plain cake with 2 1/4 cups of flour, and a sponge cake with 1 1/2 cups of flour. After he had made both cakes, he had 1 1/2 cups of flour left over. How much flour did he have when he started?

4. If an airplane flies 510 miles in 4 1/4 hours, what is its average speed per hour?

5. The basketball team played 18 games and lost 4 of them. What is the ratio of games won to games played?

6. Air temperature drops 5 1/2°F for every 1,000 feet it rises above the earth's surface. If the surface temperature is 60°F, what would the temperature be at 5,000 feet above the surface?

7. A certain plane on a flight used 43.8 gallons of gas per hour. It its flight lasted 4.5 hours, how many gallons of gas were used?

8. At 33¢ per pound, how many pounds of apples can you buy for $1.65?

9. Richard received a grade of 60% in a spelling test of 25 words. How many words did he misspell?

10. If 3/5 of the students came to the school movie, what percent did not come?

11. If the sales tax is 3%, what would the tax be on a purchase of $8.50?

REQUIRED REVIEW (continued)

12. Joe gets 7% annual interest on money in his savings account. How much interest would he get if he had $500 in his account?

13. The school team won 9 games and lost 6. What percent of the games did the team lose?

14. There were 18 salmon boats and 32 halibut boats in the harbor one day. What percent of the boats were halibut boats?

15. During a 30-day period, it rained 16 days. What was the percentage of days without rain?

16. Larry bought a camera for 20% less than the regular price. If the regular price was $40, how much did Larry pay for the camera?

17. If a cannery wants to make a profit of 25% on $600,000 worth of fish, what should it sell them for?

18. Nick put some money in his savings account. At the end of the year he had earned $100 at 5% interest. How much money had he put in at first?

19. What percent was a stereo tape recorder reduced if it was marked $225 and sold for $195?

20. A 220 pound man went on a diet. A few months later he had taken off 20% of his original weight. What did he weigh then?

READY? OK, DO PROGRESS CHECK A.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

EXTRA PRACTICE

OBJ.	SOURCE	WORK TO DO
1	Spectrum Green	p. 136, 1-7; p. 138, 1-5
	Spectrum Blue	p. 94, 1-7
	Spectrum Purple	p. 62, 1-7
2	Spectrum Blue	p. 96, 1-7
	Spectrum Purple	p. 64, 1-7
3	Spectrum Blue	p. 98, 1-7
	Spectrum Purple	p. 66, 1-7

FOR FUN - Try the "Alaska Place" puzzles on the two following pages.

PROGRESS CHECK A

UNIT 5 - PERCENT RESULT

TOPIC D - APPLIED PROBLEMS CRITERIA 8/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 1. 75% of the number of students in a class is 27. What is the total number in the class?

(2) 2. In 600 pounds of a certain grade of milk, there were 25.8 pounds of butterfat. What percent of the milk was butterfat?

(2) 3. A merchant decided that a profit of 15% of the buying price was required. If the merchant then bought a stove for $250, how much was the selling price?

(2) 4. J.M. Camp purchased a stove for $210.00 including a sales tax of 5%. How much did the stove cost without the tax?

FINISHED? CORRECT YOUR PAPER THEN SEE YOUR TEACHER BEFORE YOU GO ON.

PROGRESS CHECK B

UNIT 5 - PERCENT RESULT

TOPIC D - APPLIED PROBLEMS CRITERIA 6/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Marks — Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 1. 80% of the distance between two cities is 144 miles. How far apart are the two cities?

(2) 2. A damaged hoist is capable of lifting 3,250 pounds. If this is only 65% efficient, how much should the hoist lift when repaired?

(2) 3. Bill Gurd noticed a sale sign reading "5 tires for $67.50". He decided to buy 2 tires for the front of his car. How much did he pay for them? (Add a 5% sales tax.)

(2) 4. Ms. Peter sold dry goods at one of the local stores. She was paid a commission of 40% of all goods sold. Recently a customer came in and ordered $350 worth of goods. How much did Ms. Peter earn from this sale?

CONSUMER MATH

TOPICS IN THIS UNIT

A. Checking Account

B. Savings Account

C. Mail Order Buying

D. Budgeting

E. Income Tax

F. Social Security

G. Stocks and Bonds

BILL
BILL
BILL
BILL
6.

Unit 6.

CONSUMER MATH

A. Checking Accounts

OBJECTIVES:

1. Correctly fill out a signature card.
2. Correctly write a check.
3. Correctly fill out a deposit slip.
4. Correctly reconcile a check book.

Wouldn't it be great if somebody came up with a way that you didn't have to carry cash around with you? Wouldn't it be great if somebody came up with a way to safely send money through the mail? Well somebody did. Its called a checking account. Let's learn more about it.

1,2,3,4 Math for Citizenship Read & do p. 3-38

RAPID REVIEW

1. What are some advantages to having a checking account?
2. What must you do to open a checking account?
3. What does endorse mean?

READY? DO THE FOLLOWING PAGES FOR THE PROGRESS CHECK

Math for Citizenship do p. 101-116

NOT READY? DO MORE PROBLEMS FROM THE FOLLOWING SOURCES

Math for Citizenship do p. 39-100

Which is better; hiding your money in your mother's cookie jar or having it in a huge safe where nobody can get it except you. Not only is it safe but you even make money while it is laying around. Let's examine savings accounts.

1,2,3 Math for Banking Read p. 5-8 & 19, Do p. 27-33

RAPID REVIEW

1. What does F.D.I.C. stand for?
2. What is the difference between a regular savings account and time deposit account?
3. What is the signature card?

READY? DO PROGRESS CHECK A.

NOT READY? SEE YOUR TEACHER FOR FURTHER HELP.

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PROGRESS CHECK A

TRUE AND FALSE QUESTIONS

Read the following statements carefully. In the space before each statement write TRUE if the statement is true, or write FALSE is the statement is false. Please be sure to write clearly.

________1. A person cannot open a checking account in a savings and loan association.

________2. A regular savings account earns a higher rate of interest than a time deposit account.

________3. U.S. government borrows money from people by selling U.S. Savings Bonds.

________4. The trust department in a bank helps to manage a person's money and investments.

________5. A savings and loan association offers all the same services that a bank offers.

________6. A savings and loan association provides a borrower with free loan protection insurance and life savings insurance.

MATCHING QUESTIONS

Match the correct definition in column 2 with the correct term in column 1.

Column 1

_____1. regular savings account

_____2. U.S. savings bond

_____3. Federal Depositor's Insurance Corporation

_____4. time deposit account

_____5. Federal Savings & Loan Insurance Corporation

Column 2

A. A savings account is insured up to $20,000 if the savings & loan assoc. is a member.

B. A depositor can make a deposit of any amount and withdrawals at any time when he has this account.

C. A depositor deposits a minimum amount of money and agrees to leave it in his account for a minimum period of time.

D. A person is lending money to the federal government when he buys them.

E. A savings account is insured up to $20,000 if the bank is a memb of this.

UNDERSTANDING WHAT YOU HAVE LEARNED

Read the following questions carefully. You will find the answers for the questions in this unit.

1. What is a regular savings account?

2. Name and briefly describe the passbook time deposit account and the time certificate accounts which a person can open in a bank.

   A.

   B.

   C.

   D.

3. Name and briefly describe the three types of time certificate accounts which a person can open at a savings and loan association.

   A.

   B.

   C.

4. What is daily interest?

5. Give the dates a bank and savings and loan association pay interest at the end of each interest quarter.

   A.

   B.

   C.

   D.

6. Why should a person open a savings account in a bank which is a member of the F.D.I.C.?

7. Why should a person open a savings account in a savings and loan association which is a member of the Savings and Loan Insurance Corporation?

8. A. Describe how a person can make deposits through the mail at a bank or a savings and loan association.

   B. What shouldn't a person do when he makes a deposit through the mail?

Unit 6.

CONSUMER MATH

C. Mail Order Buying

SEARS ROEBUCK

OBJECTIVES:

1. To correctly write an order from a catalog.
2. To correctly compute shipping charges.

MAIL ORDER BUYING

Living in rural Alaska poses many problems, not the least among them is trying to buy things such as clothes, radios, etc.
In Alaska seemingly everyone knows what you mean when you say "Sears" or "Wards". Since it is such an important part of our lives, ordering correctly from a catalog is something you should know. Here is your chance:

Consumer Math	Read & do p. 134-138
Consumer work book	do p. 32 & 33

RAPID REVIEW

1. What "parcel post zone" is Alaska in? (Check in your Sears catalog).
2. What does COD mean?
3. How much would it cost to ship a 6 lb. 4 oz. package from Sears to Alaska?
4. When ordering from a major mail order store what things must you include on the order form to be sure you get what you are ordering?

UNIT IV: CONSUMER MATH

TOPIC C: MAIL ORDER BUYING

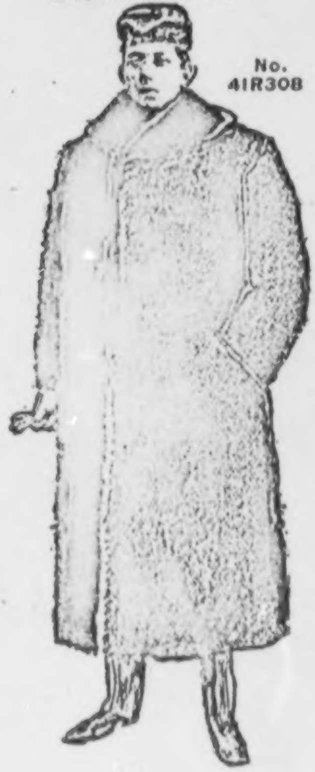
1. Using one of the following ads, order a new coat for yourself. Correctly fill in the order blank on the next page.

...Good Fur Coats Are Hard to Find...

THERE ARE SO MANY MADE UP TO SELL AND NOT TO WEAR.

That's why it pays to order one of our guaranteed coats.

Our $22.50 Natural Black Bearskin Coat.

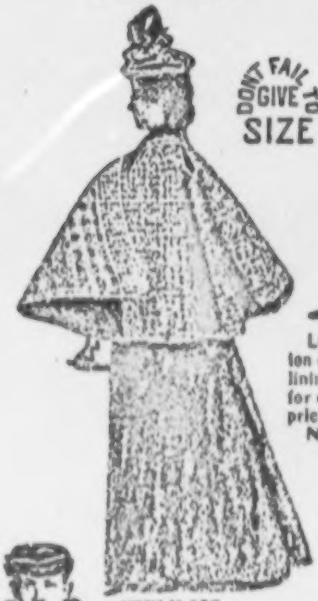


No. 41R308

This, our most popular coat last season at $24.50, we have reduced to $22.50 because we have saved just $2.00 by making five times the quantity, and therefore give our customers the benefit. This is the same grade of coat which we sold so many of last season, made from heavy jet black bearskin, very closely furred. Quilted Italian lined, leather arm shields, sewed throughout with heavy linen, warranted not to rip. Duck interlined. Better this year than ever, and the price is less.

No. 41R308 Price............$22.50

Ladies' Brown Check Mackintosh, $2.25.



STYLE 178

DON'T FAIL TO GIVE SIZE

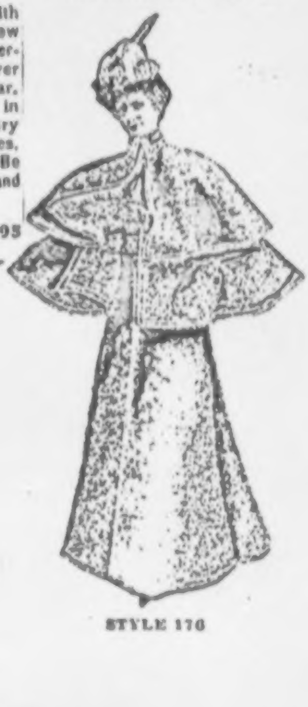
Ladies' Good Quality Mackintosh, made of fine cotton cashmere, in small brown check and fancy plaid lining. We would recommend the better qualities for durability, but this is a special value at our low price. Double breasted style. Lengths, 52 to 62.

No. 27R270 Price, each. $2.25

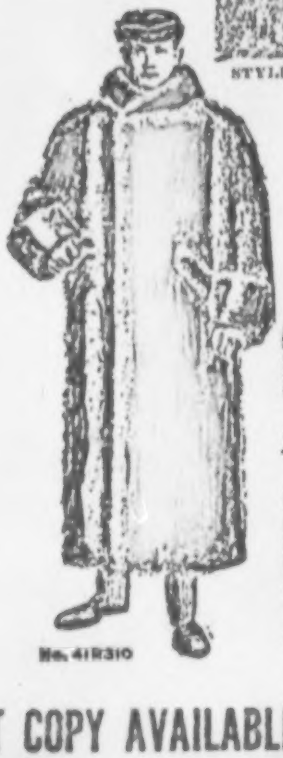
Ladies' Blue or Black Cashmere Mackintosh, $1.95.

Ladies' Fine Cotton Cashmere Mackintosh, with fancy plaid lining. An exceptional value at our low price, which is less than the cost to your local merchant. A serviceable, satisfactory, low priced over garment, which will not fail to give good wear. Made in double cape style only, as shown in illustration, with velvet collar. Full size in every particular. Colors, black or navy blue. Sizes, bust measure 32 to 42. Lengths, 52 to 62. Be sure to state color and size correctly, height and weight.

No. 27R265 Price, each $1.95



STYLE 176



No. 41R310

A FUR COAT CAN BE a DRESS COAT AS WELL AS A FUR COAT IF YOU GET THE RIGHT KIND. Our fur coats can be worn at any time or place with every satisfaction to the wearer.

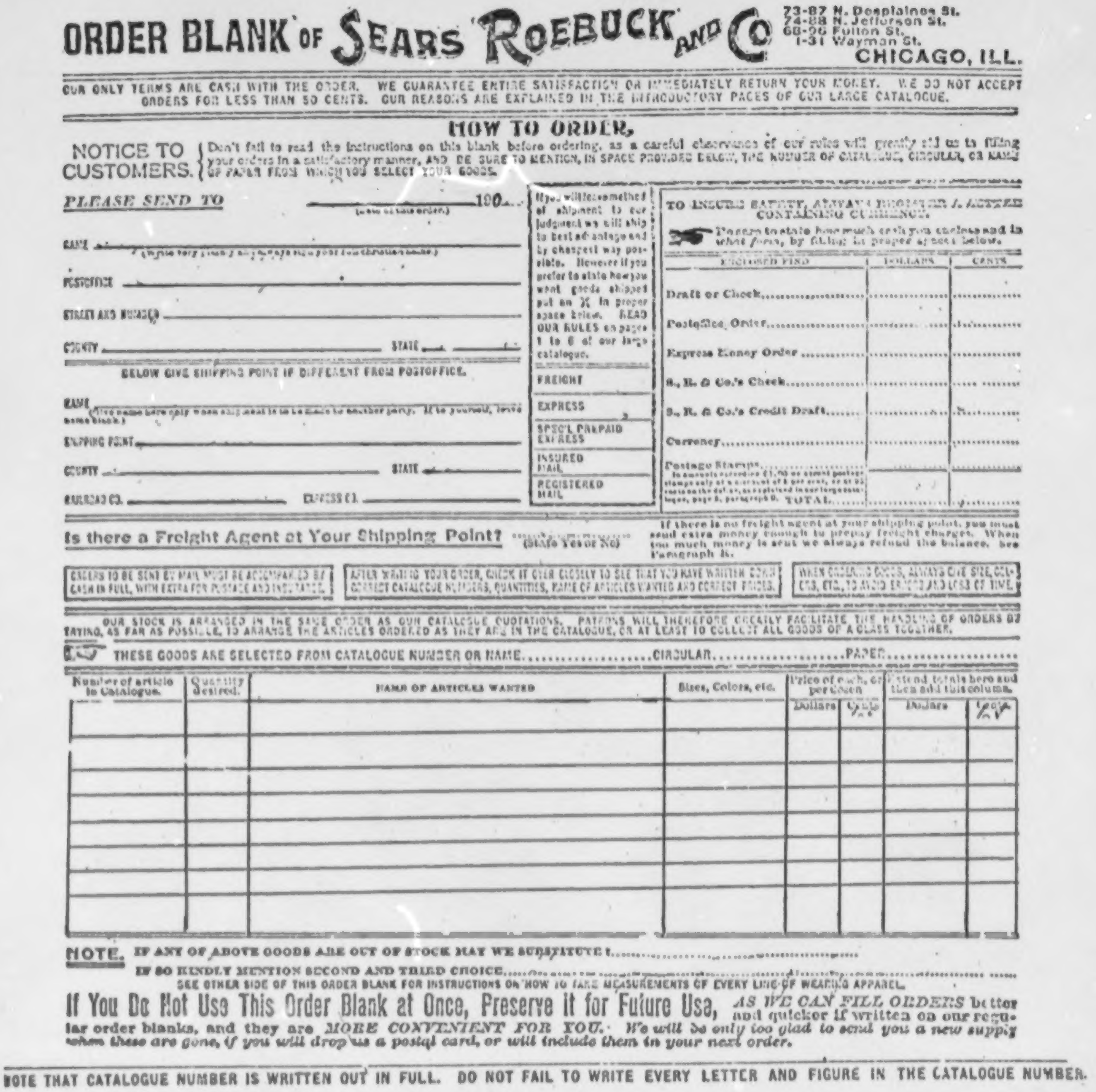
Jet Black Russian Buffalo Calf Coat for $25.00

No more popular coat in our line than this number. Don't pay $10.00 more for an inferior fur coat. Our price is $2.00 less than last season, but the coat is even better. The price we make is less than many small manufacturers can produce a similar garment. Made from jet black, glossy, Russian buffalo calf, best selected stock, southern beaver collar, cuffs and pockets, buttons and loops, quilted Italian lined, duck interlined, guaranteed for wear, appearance, workmanship, warmth, style and finish.

No. 41R310 Price............$25.00

BEST COPY AVAILABLE

2. If the coat weighs 6 lb. 9 oz., how much is it going to cost to have it shipped parcel post to Alaska?



ORDER BLANK OF SEARS ROEBUCK AND CO

73-87 N. Desplaines St.
74-88 N. Jefferson St.
68-96 Fulton St.
1-31 Wayman St.
CHICAGO, ILL.

OUR ONLY TERMS ARE CASH WITH THE ORDER. WE GUARANTEE ENTIRE SATISFACTION OR IMMEDIATELY RETURN YOUR MONEY. WE DO NOT ACCEPT ORDERS FOR LESS THAN 50 CENTS. OUR REASONS ARE EXPLAINED IN THE INTRODUCTORY PAGES OF OUR LARGE CATALOGUE.

HOW TO ORDER,

NOTICE TO CUSTOMERS. Don't fail to read the instructions on this blank before ordering, as a careful observance of our rules will greatly aid us in filling your orders in a satisfactory manner, AND BE SURE TO MENTION, IN SPACE PROVIDED BELOW, THE NUMBER OF CATALOGUE, CIRCULAR, OR NAME OF PAPER FROM WHICH YOU SELECT YOUR GOODS.

PLEASE SEND TO __________ 190__
(Date of this order.)

NAME __________
(Write very plainly and always sign your full Christian name.)

POSTOFFICE __________

STREET AND NUMBER __________

COUNTY __________ STATE __________

BELOW GIVE SHIPPING POINT IF DIFFERENT FROM POSTOFFICE.

NAME __________
(Give name here only when shipment is to be made to another party. If to yourself, leave same blank.)

SHIPPING POINT __________

COUNTY __________ STATE __________

RAILROAD CO. __________ EXPRESS CO. __________

If you will leave method of shipment to our judgment we will ship to best advantage and by cheapest way possible. However if you prefer to state how you want goods shipped put an X in proper space below. READ OUR RULES on pages 1 to 6 of our large catalogue.

FREIGHT	
EXPRESS	
SPEC'L PREPAID EXPRESS	
INSURED MAIL	
REGISTERED MAIL	

TO INSURE SAFETY, ALWAYS REGISTER A LETTER CONTAINING CURRENCY.

Be sure to state how much cash you enclose and in what form, by filling in proper space below.

ENCLOSED FIND	DOLLARS	CENTS
Draft or Check		
Postoffice Order		
Express Money Order		
S., R. & Co.'s Check		
S., R. & Co.'s Credit Draft		
Currency		
Postage Stamps In amounts exceeding $1.00 we accept postage stamps only at a discount of 5 per cent, or at 95 cents on the dollar, as explained in our large catalogue, page 5, paragraph 9.		
TOTAL		

Is there a Freight Agent at Your Shipping Point? __________ (State Yes or No)

If there is no freight agent at your shipping point, you must send extra money enough to prepay freight charges. When too much money is sent we always refund the balance. See Paragraph 5.

ORDERS TO BE SENT BY MAIL MUST BE ACCOMPANIED BY CASH IN FULL, WITH EXTRA FOR POSTAGE AND INSURANCE.

AFTER WRITING YOUR ORDER, CHECK IT OVER CLOSELY TO SEE THAT YOU HAVE WRITTEN DOWN CORRECT CATALOGUE NUMBERS, QUANTITIES, NAME OF ARTICLES WANTED AND CORRECT PRICES.

WHEN ORDERING GOODS, ALWAYS GIVE SIZE, COLORS, ETC., TO AVOID ERRORS AND LOSS OF TIME.

OUR STOCK IS ARRANGED IN THE SAME ORDER AS OUR CATALOGUE QUOTATIONS. PATRONS WILL THEREFORE GREATLY FACILITATE THE HANDLING OF ORDERS BY TRYING, AS FAR AS POSSIBLE, TO ARRANGE THE ARTICLES ORDERED AS THEY ARE IN THE CATALOGUE, OR AT LEAST TO COLLECT ALL GOODS OF A CLASS TOGETHER.

THESE GOODS ARE SELECTED FROM CATALOGUE NUMBER OR NAME.................... CIRCULAR.................... PAPER....................

Number of article in Catalogue.	Quantity desired.	NAME OF ARTICLES WANTED	Sizes, Colors, etc.	Price of each, or per dozen		Extend totals here and then add this column.	
				Dollars	Cents	Dollars	Cents

NOTE. IF ANY OF ABOVE GOODS ARE OUT OF STOCK MAY WE SUBSTITUTE?....................
IF SO KINDLY MENTION SECOND AND THIRD CHOICE....................

SEE OTHER SIDE OF THIS ORDER BLANK FOR INSTRUCTIONS ON HOW TO TAKE MEASUREMENTS OF EVERY LINE OF WEARING APPAREL.

If You Do Not Use This Order Blank at Once, Preserve it for Future Use, *AS WE CAN FILL ORDERS* better and quicker if written on our regular order blanks, and they are *MORE CONVENIENT FOR YOU.* *We will be only too glad to send you a new supply when these are gone, if you will drop us a postal card, or will include them in your next order.*

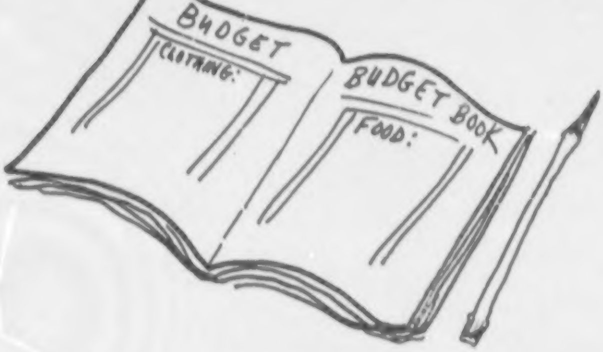
NOTE THAT CATALOGUE NUMBER IS WRITTEN OUT IN FULL. DO NOT FAIL TO WRITE EVERY LETTER AND FIGURE IN THE CATALOGUE NUMBER.

BEST COPY AVAILABLE

Unit 6

CONSUMER MATH

D. Budgeting


BUDGET
CLOTHING:
BUDGET BOOK
FOOD:

OBJECTIVES:

1. Develop a budget for a specific amount of time.
2. Keep a cash record of earnings and expenses.

Have you ever been out of money before you thought you should? Perhaps you had enough money to buy and do everything you wanted to, but now its all gone. What happened to it? If you knew how to keep a budget you probably wouldn't have run out of money before you finished buying what you needed. Here is your chance to learn how to keep a budget.

1,2	Math for the Worker	Read and Do p. 109-119

RAPID REVIEW

1. What is a budget?

2. What does a cash record keep track of?

READY? DO PROGRESS CHECK A.

NOT READY? DO MORE WORK FROM THE SOURCES LISTED BELOW

1,2	Math for the Worker	Do p. 120-130

PROGRESS CHECK A

Do pages 131 through 136 in Math for the Worker

Unit 6.

CONSUMER MATH

E. Income Tax

OBJECTIVE:

1. Fill out correctly a 1040 A Short Tax Form given enough information.

OBJ.	SOURCE	WORK TO DO
1	Consumer Math	Read p. 212-229, working the text exercises as you come to them

RAPID REVIEW

REMEMBER

Total income = sum of all wages, dividends, interest, tips, royalties, and other income earned during the year

1. Jack earned $11,400 in wages, $673.57 in interest and $1,195 in dividends. What was his total income?

REMEMBER

Taxable income = Total Income - Deductions

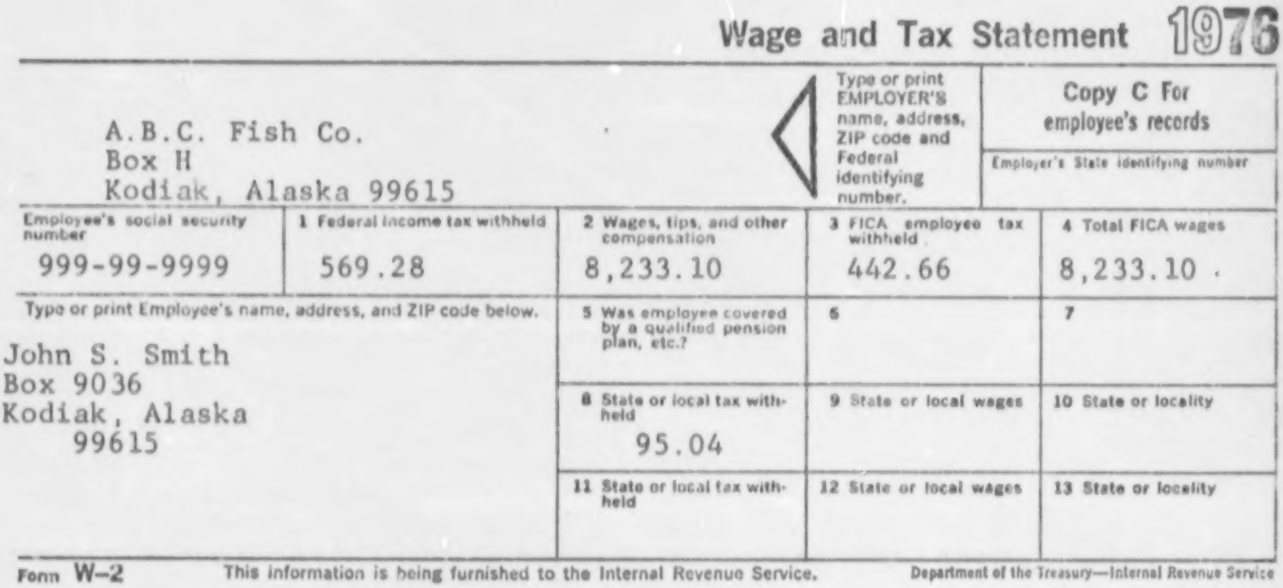
2. Using Jack's total income from problem 1 above, what would Jack's taxable income be if he used the standard 15% standard deduction and he is entitled to 2 exemptions at $750 each?

READY? OK, DO THE PROGRESS CHECK

NOT READY? SEE YOUR TEACHER FOR FURTHER HELP

PROGRESS CHECK

Get a copy of the current U.S. Individual Income Tax Return booklet from your teacher and fill out form 1040A (Short Form) using the information in the booklet, the W-2 form shown below,



Wage and Tax Statement 1976

A.B.C. Fish Co. Box H Kodiak, Alaska 99615			Type or print EMPLOYER'S name, address, ZIP code and Federal identifying number.	Copy C For employee's records Employer's State identifying number
Employee's social security number 999-99-9999	1 Federal income tax withheld 569.28	2 Wages, tips, and other compensation 8,233.10	3 FICA employee tax withheld 442.66	4 Total FICA wages 8,233.10
Type or print Employee's name, address, and ZIP code below. John S. Smith Box 9036 Kodiak, Alaska 99615		5 Was employee covered by a qualified pension plan, etc.?	6	7
		8 State or local tax withheld 95.04	9 State or local wages	10 State or locality
		11 State or local tax withheld	12 State or local wages	13 State or locality

Form W-2 This information is being furnished to the Internal Revenue Service. Department of the Treasury—Internal Revenue Service

and the following information:

In addition to his wages, John also received $67.42 in interest from his savings account. He is single, and claims only himself as an exemption. John was born on May 29, 1960.

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Unit 6

CONSUMER MATH

G. Stocks and Bonds

OBJECTIVES:

Apply the five-step method of solving word problems to

1. Compute stock dividends.
2. Compute fractional part of stock owned.
3. Compute bond interest.
4. Compute current yield of a bond.

Unit 6.

CONSUMER MATH

F. Social Security

OBJECTIVES :

Apply the five-step method for solving word problems to

1. Compute F.I.C.A (Social Security) tax paid by an employer and by a self-employed person.
2. Compute monthly cash benefits from Social Security retirement, survivor's, and disability benefits.

OBJ.	SOURCE	WORK TO DO
1	Consumer Math	Read p. 238-240, Do p. 240-241, 1-16
2	Consumer Math	REad p. 241-243, Do p. 243-245

RAPID REVIEW

REMEMBER

1. The amount of F.I.C.A. tax paid to the government is twice the product of the percent times the earnings (2 x % x earnings).

2. For a self-employed worker, the amount of F.I.C.A. tax is simply the "self-employed" percent times the earnings (% x earnings).

1. Sarah earned $120 as a clerk last month at the grocery store. At the 5.85% rate, how much F.I.C.A. tax was paid to the government?

2. Ann, a self-employed welder, earned $650 one month. At the 8.0% rate, how much F.I.C.A. tax did she pay the government?

READY? OK, DO THE PROGRESS CHECK.

NOT READY? SEE YOUR TEACHER FOR FURTHER HELP.

PROGRESS CHECK

1. John Smith earned $620 in June while working for the A.B.C. Fish Co. How much will be paid to the government by his employer, at the 5.85% rate?

2. Joe Barnes is a self-employed fisherman. He earned $7,280 one quarter. At the 8.0% rate, how much did he contribute to F.I.C.A.?

3. John Smith's paycheck stub for June showed that $37.22 was withheld for F.I.C.A. from his earnings of $620. At the 5.85% rate,
   a. was this the right amount to be withheld?
   b. what should the amount have been?

4. Jake Johnson received a primary benefit of $213.30 when he retired. His wife Judy was entitled to 50% of this amount.
   a. What was the amount of Mrs. Johnson's benefits?
   b. What was the Johnson's total benefit?
   c. If the total family benefit allowable is $370.70, can they draw the total of their two benefits?

5. Mrs. Black received a monthly survivor's benefit of $213.30 after the death of her husband. This was 75% of the primary benefit. What was the primary benefit?

6. Mr. Greene became disabled at a time when his average yearly income was $9000. This entitled him to a primary benefit of $354.50. In addition his wife and child were each entitled to benefits of 50% of the primary benefit, up to a family maximum of $620.40.
   a. What was Mrs. Greene's benefit?
   b. What was the child's benefit?
   c. What was the total of the benefits for Mr. Greene, Mrs. Greene, and the child?
   d. Will this amount be paid?
   e. How much will the Greene's benefit payment be?

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OBJ.	SOURCE	WORK TO DO
1,2	Consumer Math	Read p. 382-385, Do p. 385-386
3,4	Consumer Math	Read p. 400-402, Do p. 403

RAPID REVIEW

REMEMBER

1. $$\frac{\text{Number of shares owned}}{\text{Number of shares issued}} = \text{Fractional part of ownership}$$

2. Par value of stock x % dividend = dividend per share

3. Dividend per share x number of shares owned = total dividend

1. Sally owned 600 shares of a company whose outstanding shares totaled 240,000. If each share had a par value of $4, and the company paid a 2% dividend on each share,

   a. How much did Sally receive in dividends?

   b. What fractional part of the company did she own?

REMEMBER

1. $$\frac{\text{Amount of interest paid yearly}}{\text{Par value of the bond}} = \text{Yield}$$

2. $$\frac{\text{Amount of interest paid yearly}}{\text{Purchase price of bond}} = \text{Current Yield}$$

2. The par value of a bond was $2000, and it paid $16 in yearly interest. Tom purchased the bond for $1800.

   a. What was the yield of the bond based on its par value?

   b. What is the current yield?

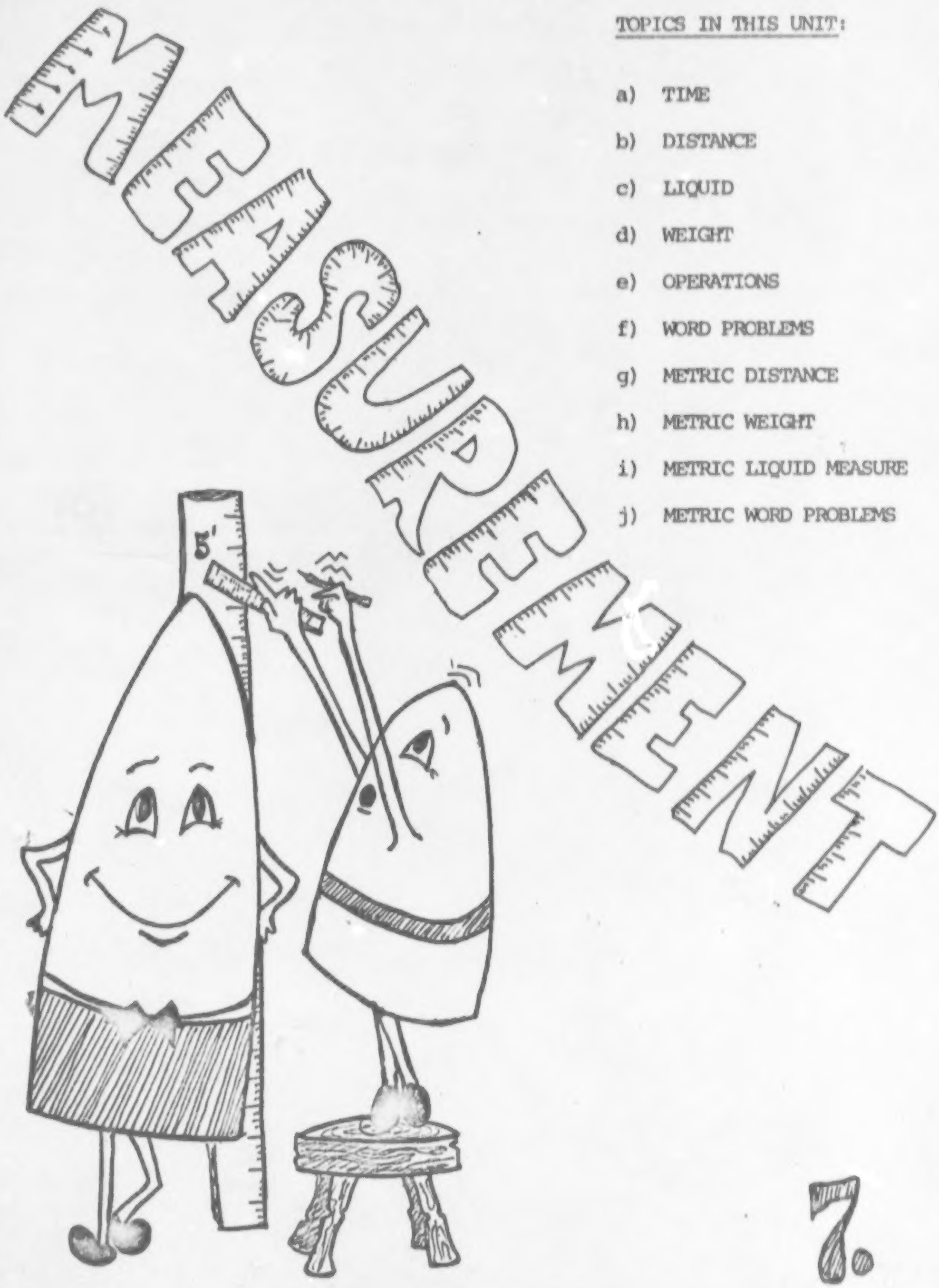
READY? OK, DO THE PROGRESS CHECK ON PAGE 94 & 95 OF THE CONSUMER ACTIVITIES BOOK

NOT READY? SEE YOUR TEACHER FOR FURTHER HELP.

MEASUREMENT

TOPICS IN THIS UNIT:

a) TIME
b) DISTANCE
c) LIQUID
d) WEIGHT
e) OPERATIONS
f) WORD PROBLEMS
g) METRIC DISTANCE
h) METRIC WEIGHT
i) METRIC LIQUID MEASURE
j) METRIC WORD PROBLEMS



7.

UNIT 7 MEASUREMENT

INTRODUCTION TO THE METRIC SYSTEM

Question: What is the Metric System?

Answer: *It is a decimal system for measuring things like length, capacity, weight, area, and volume. It is based on tens instead of numbers such as twelve, three, two and four which we now use.*

Question: Why do I need to know it?

Answer: *Because soon this will be the system of measurement in the United States; it will replace the English system of feet, miles, pounds, quarts, etc.*

Question: Why is the United States changing to this system?

Answer:
1. *Because most of the rest of the world uses it, and*
2. *Because it is much easier to understand and use than the English system.*

The reason that the Metric System is far simpler than the English system is that Metric Measurements use one basic unit for each type of measurement. The meter is the basic unit of capacity length, the liter is the basic unit of capacity (liquid and dry measures), and the gram is the basic unit of weight.

By adding prefixes to these basic units, smaller or larger measures of them can be named:

kilo - means thousand (1,000)
hecto - means hundred (100)
deka - means ten (10)
deci - means one-tenth (1/10)
centi - means one-hundredth (1/100)
milli - means one-thousandth (1/1000)

**10 of each unit is 1 of the next higher unit.*

INTRODUCTION TO THE METRIC SYSTEM (continued)

We're lucky here in the United States. We have the dollar system to help us "*think metric*". Both the dollar system and the metric system are DECIMAL systems. That is, they use the DECIMAL POINT to multiply or divide by 10, or some power of 10, like 100 or 1000.

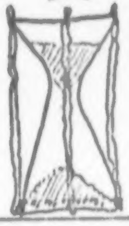
Take the number 1, for example. Add a decimal point after and you have 1. or one dollar. Move the decimal point one zero to the right and you have 10. or ten dollars. Now move it two zeros to the right, and you have 100. or one hundred dollars, etc. The same applies exactly to the metric system, except that you have prefixes like "*kilo*" and "*centi*" instead of "*thousand*" *and* "*one-hundredth*". It's even simpler!

Money		Length	Weight	Liquid measure
one thousand dollars	*1000.00*	*one kilometre*	*one kilogram*	*one kilolitre*
one hundred dollars	*100.00*	*one hectometre*	*one hectogram*	*one hectolitre*
ten dollars	*10.00*	*one decametre*	*one decagram*	*one decalitre*
one dollar	*1.00*	*one metre*	*one gram*	*one litre*
ten cents	*0.10*	*one decimetre*	*one decigram*	*one decilitre*
one cent	*0.01*	*one centimetre*	*one centigram*	*one centilitre*

Unit 7.

MEASUREMENT

A. Time



OBJECTIVES:

1. Identify seconds, minutes, hours, days, weeks, months, years and centuries as units of time.

2. Define a unit of time in terms of a given unit (i.e., *1 minute = 60 seconds*).

3. Read and write the abbreviations for seconds (*sec.*), minutes (*min.*), hours *(hr.)*, days (*da.)*, weeks (*wk.)*, and years *(yr.)*.

4. Add and subtract 12 hour clock times including cases in subtraction where borrowing is required.

5. State the time zones in the United States.

6. State the time in one part of the U.S. given the time in another part.

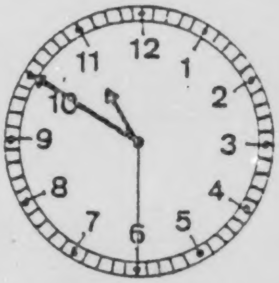
7. Use time readings and calculations in solving word problems.

UNIT: 7

TOPIC A: TIME

Chk:	Obj:	Source:	Work to do:
	1,2,3	Math, A Basic Course	READ: pages 140 & 141; DO: pages 141
	4	Spectrum Purple	DO: pages 133-136
	4	Math, A Basic Course	READ: page 142; DO: pages 143-144.

RAPID REVIEW:



1. Answer the following:

   a) There are ___________ minutes in an hour.

   b) There are ___________ seconds in a minute.

   c) Look at the clock on the right and identity the time indicated on the clock face using seconds, minutes and hours:

   ____ minutes and ____ seconds past ____ o'clock.

Short periods of time are measured in seconds, minutes and hours, but time is also measured in longer periods of time: days, months, and years.

Each month does not have the same number of days in it. The verse below may be of some help in remembering the days in the month:

'Thirty days has September,
April, June and November;
All the rest have thirty-one
Except February which has twenty-eight,
And leap year makes it twenty-nine.'

2. Answer the following:

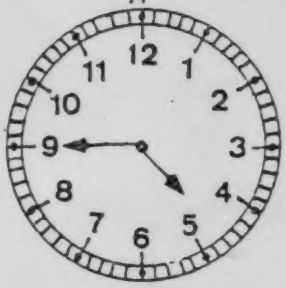
a) There are ______ weeks in a year.

b) There are ______ months in a year.

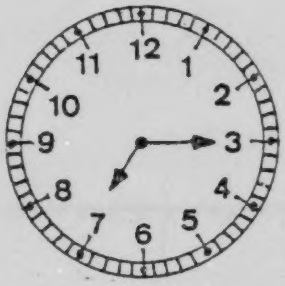
c) There are ______ days in a year.

WRITE THE NUMBER OF HOURS AND MINUTES THAT HAVE PASSED BETWEEN THE TWO CLOCKS FOR EACH:

A



B



THE TIME ON CLOCK 'A' IS ________.

THE TIME ON CLOCK 'B' IS ________.

CLOCK 'B' → 7 HRS. 15 MINS.
CLOCK 'A' → -4 HRS. 45 MINS.

60 MINUTES + 15 = 75 MINUTES

7 HOURS - 1 HR = 6 HOURS

CLOCK 'B' 6 HRS. 75 MINS.
-4 HRS. 45 MINS.

____ HRS. ____ MINS.

3. Add the following time problems:

a) 3 hr. 18 min.
+6 hr. 22 min.

b) 9 hr. 28 min.
+6 hr. 12 min.

c) 4 hr. 45 min.
+8 hr. 20 min.

d) 1 hr. 50 min.
+1 hr. 45 min.

e) 9 hr. 34 min.
+4 hr. 33 min.

f) 3 hr. 27 min.
6 hr. 13 min.
+2 hr. 35 min.

4. Subtract the following:

a) 8 hr.
-4 hr. 30 min.

b) 10 hr. 5 min.
-2 hr. 15 min.

c) 6 hr. 35 min.
-1 hr. 50 min.

Days, weeks, and months must also be regrouped when adding or substracting:

EXAMPLE: *(there are 7 days in one week)*

3 weeks 5 days
+2 weeks 6 days
5 weeks 11 days

11 days = _____week and _____days, combined with the other 5 weeks in the answer, this gives us a total of _____weeks and -_______days.

5. Add the following:

a) 2 weeks 5 days
+5 weeks 11 days

b) 7 weeks 3 days
+3 weeks 5 days

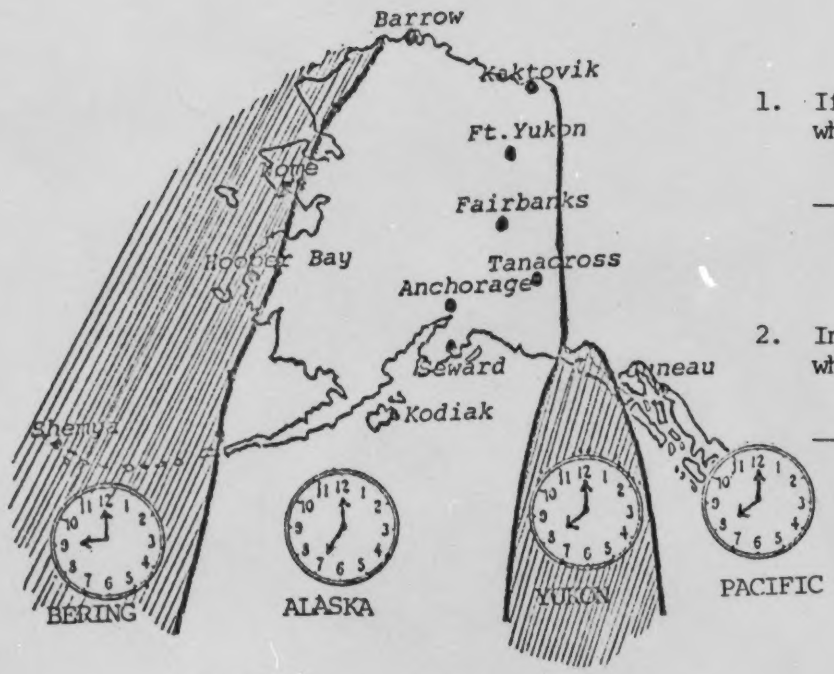
c) 6 weeks 4 days
+2 weeks 4 days

6. Substract the following:

a) 4 weeks 3 days
-2 weeks 3 days

b) 6 weeks 2 days
-4 weeks 3 days

c) 3 weeks 5 days
-2 weeks 6 days


Barrow
Kaktovik
Ft.Yukon
Nome
Fairbanks
Hooper Bay
Tanacross
Anchorage
Seward
Juneau
Shemya
Kodiak
BERING
ALASKA
YUKON
PACIFIC

1. If it is 4:00 AM in Kodiak, what time is it in New York?

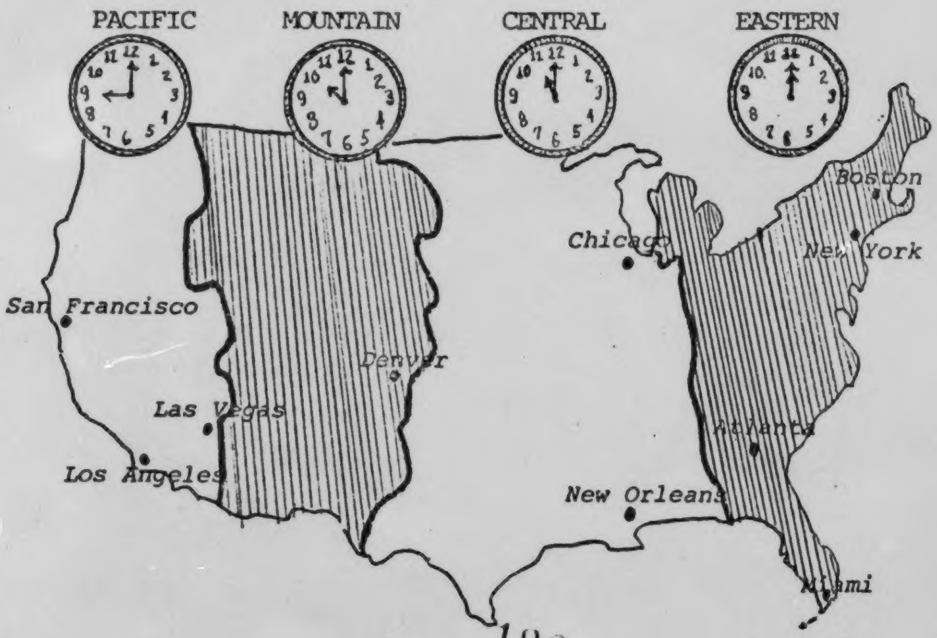
____

2. In Hooper Bay it is 3:00 PM, what time is it in Seattle?

____

3. Fred just won a lot of money on a slot machine in Las Vegas. It is 7:00 AM in Las Vegas and he wants to call his mother in Kodiak. Is that a good idea? What time is it in Kodiak? ___________________

4. John just pulled into Fort Yukon after having driven the Alcan highway. It is 7:00 PM. He wants to call his relatives in Denver and tell them he made it safely. What time is it in Denver? ___________________


PACIFIC
MOUNTAIN
CENTRAL
EASTERN
Boston
New York
Chicago
San Francisco
Denver
Las Vegas
Los Angeles
Atlanta
New Orleans
Miami

UNIT: 7

TOPIC A: TIME

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2, 3	Refresher Math	READ: page 405; DO: green test page 406

PROGRESS CHECK A

UNIT: 7

TOPIC A: TIME

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Check ( ) the words below which are units of time.

_____*feet* _____*seconds* _____*pounds* _____*hours*

(5) 2. Fill in the blanks:

a) 1 min. = ____sec.

b) 1 wk. = ____da.

c) 1 yr. = ____da.

d) 2½ hr. = ____min.

e) 10 mo. = ____yr.

(4) 3. Add: *a) 5 hr. 3 min.*
+2 hr. 51 min.

Subtract: *b) 1 hr. 40 min.*
-45 min.

c) 2½ hours earlier than 3:15 is ____________________.

c) 4¼ hours later than 11:30 is ____________________.

( ) 4. How many time zones are there in Alaska?

____.

(1) 5. If it is 5 PM in Seattle, what time is it in Anchorage?

____.

PROGRESS CHECK B

UNIT: 7

TOPIC A: TIME

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Check ( ) the words below which are units of time:

____*miles* ____*days* ____*years* ____*quarts*

(5) 2. Fill in the blanks:

a) 1 hr. = ____min.

b) 1½ min. = ____sec.

c) 1 century = ____yr.

d) 1 mo. = ____yr.

e) 90 sec. = ____min.

(4) 3. Add: *a) 6 hr. 35 min.*
+1 hr. 25 min.

Subtract: *b) 2 hr. 10 min.*
-1 hr. 50 min.

c) 30 minutes later than 2:45 PM is ________________.

c) 10 hours earlier than 5:15 PM is ________________.

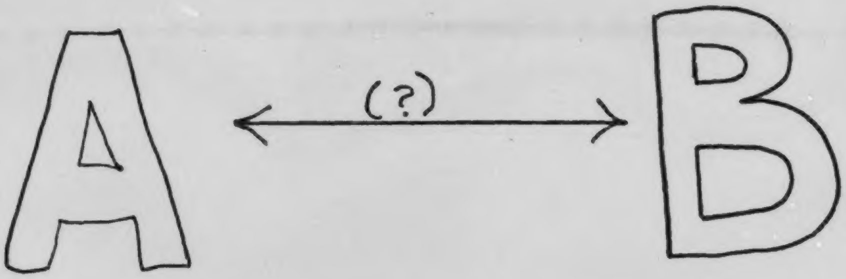
(1) 4. If it is 5 PM in New York, what time is it in Seattle?

____

Unit 7.

MEASUREMENT

B. Distance



OBJECTIVES:

1. Identify inches, feet, yards, and miles as units of measure in the English system.
2. Define a unit of distance in terms of a given unit (12 inches = 1 foot)
3. Read and write abbreviations for inch (in. & ") foot (ft. & '), yard (yd.) and mile (mi.)
4. Measure a given distance with a ruler or tape.
5. Convert one unit of measure to another unit.

UNIT 7

TOPIC B: DISTANCE (LENGTH)

Chk:	Obj:	Source:	Work to do
	1,2, 3,4	Math, A Basic Course	Read: pages 126 & 127; Do page 128 & 129

RAPID REVIEW:

1. Measure the line to the nearest 1/8 of an inch.

____ = ______*inches*

2. Fill in the abbreviations for the following:

a. *inches* ______ b. *foot* _______ c. *yards* ______

3. Convert the following:

a. _______*inches = 1 foot* b. _____*feet = 1 yard*

c. _______*feet = 1 mile* d. _______ *yards = 1 mile*

4. convert the following:

a. *24 inches =* _____ *feet* b. *60 inches =* _____*feet*

c. *60 inches =* _____*yards* d. *10,560 feet =* _____*miles*

READY? DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 7

TOPIC B: DISTANCE (LENGTH)

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2,3, 4	Refresher Math	READ: pages 296-298 DO: green test page 299 (Do practice for the problems missed)

PROGRESS CHECK A

UNIT: 7

TOPIC B: DISTANCE (LENGTH) CRITERIA 13/14

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Check ( ) the words below which are units of distance.

_____*feet* _____*seconds* _____*miles* _____ *quarts*

(6) 2. Fill in the blanks:

a. 36 in. = ____ft. *d. 13 ft. = _____in.*

b. 1 ft. = _____in. *e. 10,560 ft. = _____mi.*

c. 2 miles = _____ft. *f. 2 ft. = _____in.*

(1) 3. Measure the line to the nearest 1/8 of an inch.

____________________________________ = _____*in.*

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 4. How long are each of the pieces when a 2 foot board is cut into 4 equal pieces?

____.

(2) 5. How long will it take to go 330 miles at a speed of 55 miles per hour?

____.

(2) 6. If in your town the blocks are 450 feet long, how many blocks, (to the nearest block), are there in a mile?

____

PROGRESS CHECK B

UNIT: 7

TOPIC B: DISTANCE (LENGTH) CRITERIA 12/14

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Check ( ) the words below which are units of distance.

_____*seconds* _____*inches* _____*feet* _____*tons*

(6) 2. Fill in the blanks:

a. 24 inc. = _____feet

b. 2 ft. = _____in.

c. 1 mi. = _____ft.

d. 15 ft. = _____in.

e. 5,280 ft. = _____mi.

f. 4 ft. = _____in.

(1) 3. Measure the line to the nearest 1/8 of an inch.

_________________________________ = _____*in.*

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 4. How many feet of ribbon are required when seven 60 inch pieces are needed?

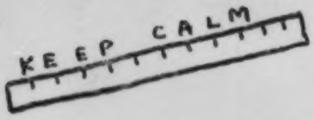
____

(2) 5. What speed would you have to travel to go 180 miles in 3 hours?

____

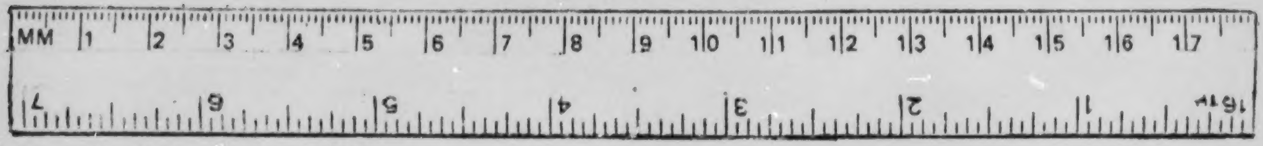
(2) 6. If each step in a stairway is 12 inches higher than the one below it, how many feet is it from the main floor to next floor if there are 30 steps?

____



MEASUREMENT IN METRICS

READING A SECRET CODE



Find each measurement on the ruler above. At the point where you found that measurement, write the letter that accompanies it in the list.

When you have located all of them correctly, you will have spelled a message.

A--5 mm.
E--4 cm.
E--48 mm.
E--127 mm.
E--15 cm.
F--1 cm.
H--18 mm.
H--3.7 cm.
H--8.5 cm.
H--12.5 cm.
I--1.2 cm.

I--2.5 cm.
I--6 cm.
I--11 cm.
I--14.4 cm.
N--2.6 cm.
N--4.5 cm.
N--11.4 cm.
O--7.5 cm.
O--10 cm.
R--7.9 cm.
R--14 cm.

R--15.3 cm.
S--15 mm.
S--6.5 cm.
T--3.4 cm.
T--5.2 cm.
T--8.2 cm.
T--9.5 cm.
T--12.2 cm.
V--14.6 cm.
W--9.7 cm.

MAKE YOUR OWN MESSAGE

Now, using either of the 2 examples as a model, create your own "measurement message". Give it to a classmate to decipher.

Unit 7

MEASUREMENT

C. Liquid

UNIT: 7 MEASUREMENT

TOPIC C: LIQUID

OBJECTIVES:

1. Identify cups, fluid ounces, pints, quarts, and gallons as units of liquid measure.
2. Define a unit of liquid measure in terms of a given unit (2 pints = 1 quart)
3. Read and write abbreviations for pints (pt.), fluid ounces (fl. oz.), quarts (qt.) and gallons (gal.)
4. Convert one unit of liquid measure to another.

UNIT: 7

TOPIC C: LIQUID

Chk:	Obj:	Source:	Work to do:
	1,2,3 4	Math, A Basic Course	READ: (bottom) page 137 & 138 DO: page 138

RAPID REVIEW:

1. Fill in the abbreviation for the following:

   a. pint_____ b. quart _____ c. fluid ounces _____

2. Convert the following:

   a. 2 cups = _____pint b. _____fluid ounces = 1 pint

   c. _____pints = 1 quart d. _____quarts = 1 gallon

3. Convert the following:

   a. 8 cups = _____pints b. 18 pints = _____quarts

   c. 32 gallons = _____quarts d. 7 quarts = _____pints

READY? DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 7

TOPIC C: LIQUID

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2,3 4	Refresher Math	READ: page 391; Do green test page 392 (do practice examples for the ones you missed)

PROGRESS CHECK A

UNIT: 7

TOPIC C: LIQUID CRITERIA 11/12

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Check ( ) the words below which are units of liquid measurement.

____pounds ____quarts ____feet ____cups

(4) 2. Fill in the blanks:

a. 1 qt. = ____c.

b. 25 c. = ____fl. oz.

c. 24 c. = ____qt.

d. 4 gal. = ____qt.

(5) 3. Find the cost per fl. oz. in each of the following to the nearest 1/10 cent.

a. 10 fl. oz. for 15 cents ____________________

b. 12 cups for $2.12 ____________________

c. 16 fl. oz. for 22 cents ____________________

d. 48 fl. oz. for 35 cents ____________________

e. 2.5 cups for 88 cents ____________________

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 4. A 12 fl. oz. bottle of lotion costs 79 cents while a 20 fl. oz. bottle costs $1.10. Find the cost per fluid ounce (nearest 1/10 cent) in each and the best buy.

a. 12 fl. oz. ______________cents per fluid ounce

b. 20 fl. oz. ______________cents per fluid ounce

c. Best buy ______________________________

PROGRESS CHECK B

UNIT: 7

TOPIC C: LIQUID CRITERIA 10/12

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Check ( ) the words below which are units of liquid measurement.

____*feet* ____*cups* ____*pounds* ____*fluid ounces*

(4) 2. Fill in the blanks:

a. 32 fl. oz. = ____c.

b. 2 gal. = ____qt.

c. 12 c. = ____pt.

d. 2 gal. = ____pt.

(5) 3. Find the cost per fl. oz. in each of the following to the nearest 1/10 cent.

a. 28 fl. oz. for 30 cents ____________

b. 32 fl. oz. for $12.40 ____________

c. 12 pt. for 75 cents ____________

d. 8 fl. oz. for 10 cents ____________

e. 4 pt. for $1.00 ____________

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 4. A soft drink in a 16 fl. oz. bottle costs 16 cents and the same drink in a 1 qt. bottle costs 32 cents. What is the cost per fl. oz. in each? (nearest 1/100 cent)

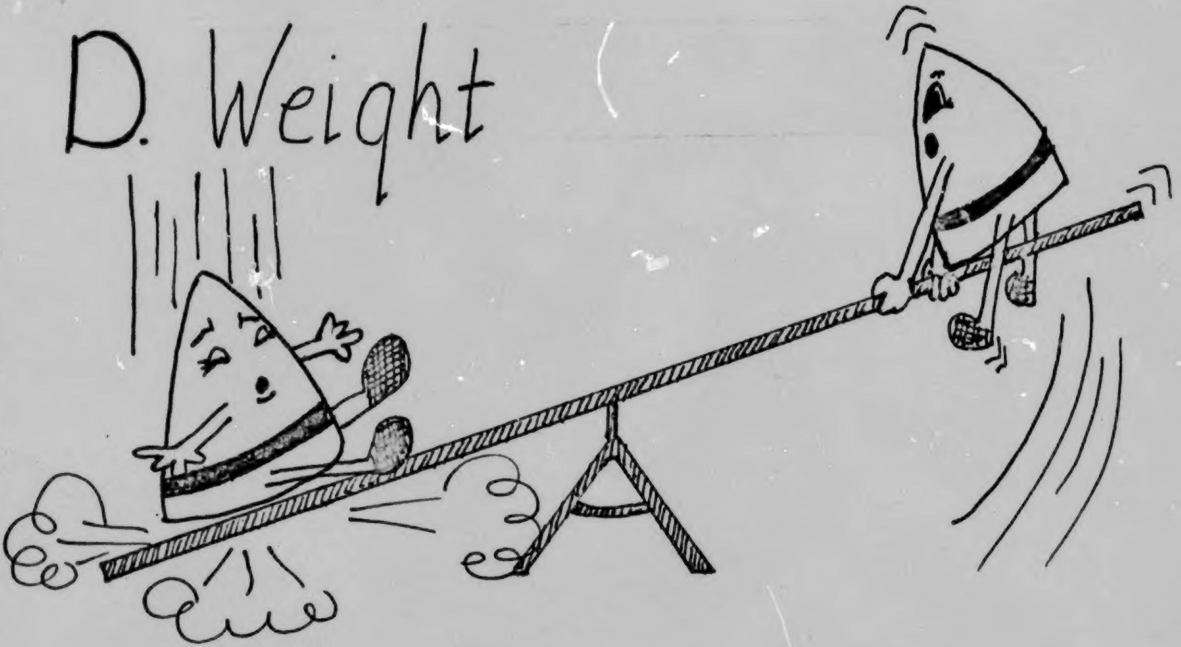
a. 16 fl. oz. ____________

b. 1 qt. ____________

Unit 7

MEASUREMENT

D. Weight



OBJECTIVES:

1. Identify ounces, pounds, and tons as units of weight measure.
2. Define a unit of weight measure in terms of a given unit (16 ounces = 1 pound)
3. Read and write the abbreviation for ounces (oz.), pounds (lb.) and tons (t.)
4. Convert one unit of weight measure to another unit.

UNIT: 7

TOPIC D: WEIGHT

Chk:	Obj:	Source:	Work to do:
	1,2,3, 4	Math, A Basic Course	READ: page 136 DO: page 137

RAPID REVIEW:

1. Fill in the abbreviation for the following:

   a. ounces ______ b. pounds ______ c. ton ______

2. Convert the following:

   a. ______ounces = 1 pound b. ______pounds = 1 ton

3. Convert the following:

   a. 2 lb. = ______ounces b. 6 tons = ______pounds

   c. 48 ounces = ______pounds d. 4 tons = ______ounces

READY? DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 7

TOPIC D: WEIGHT

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2,3, 4	Refresher Math	READ: page 400 DO: green test page 401 (Do practice examples for the problems you missed.)

PROGRESS CHECK A

UNIT: 7

TOPIC D: WEIGHT CRITERIA 11/13

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. Check ( ) the words below which are units of weight measure.

a. ____ounces ____pounds ____quarts ____miles

(4) 2. Fill in the blanks:

a. 160 oz. = _____lb.

b. 2,000 lb. = _____t.

c. 10,000 lb. = _____t.

d. 32 oz. = _____lb.

(2) 3. Find the cost per ounce in each of the following to the nearest cent.

a. 20 oz. costs 60 cents ____________

b. 1 lb. costs $7.48 ____________

(2) 4. Find the cost per pound in each of the following to the nearest cent.

a. 10 lb. costs $5.20 ____________

b. 32 oz. costs 6 cents ____________

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 5. Calculate the value of stamps required to send a 120 oz. letter at rates of 8¢ for 30 oz. and 6¢ for each additional 30 oz.

____

(2) 6. Which is the best buy of tomatoes at 99¢ for 2 lb. or $1.90 for 4 lb.?

____

21

PROGRESS CHECK B

UNIT: 7

TOPIC D: WEIGHT CRITERIA 12/13

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Check ( ) the words below which are units of weight measure.

____*ounces* ____*pounds* ____*feet* ____*quarts*

(4) 2. Fill in the blanks:

a. 1 t. = ____lb. *c. 6000 lb. ____t.*

b. 200 lb. = ____oz. *d. 144 oz. = ____lb.*

(2) 3. Find the cost per ounce in each of the following to the nearest cent.

a. 12 oz. costs 48 cents ____________

b. 5 lb. costs $8.32 ____________

(2) 4. Find the cost per pound in each of the following to the nearest cent.

a. 128 oz. costs 27 cents ____________

b. 2 lb. costs $1.20 ____________

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 5. If the freight charges on a certain carrier are $5.00 per 100 pounds, what will it cost to ship a crate of furniture weighing 750 pounds?

____

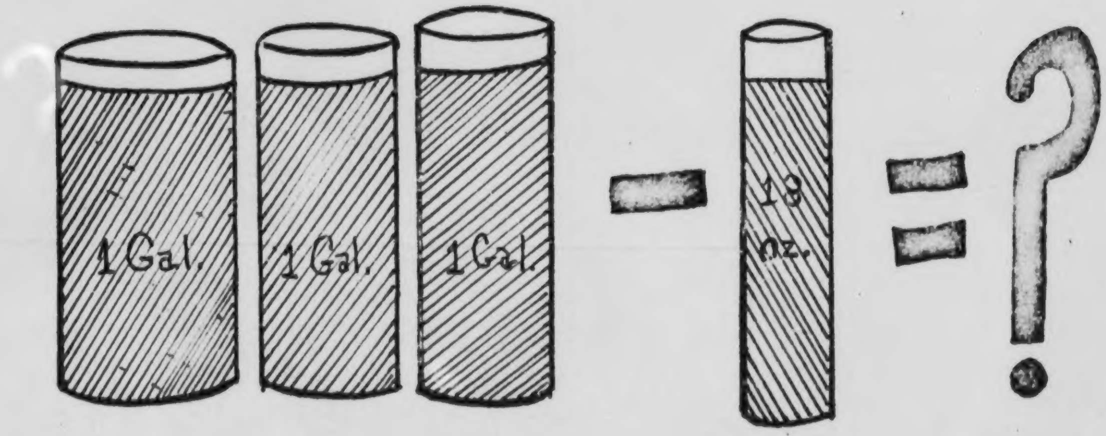
(2) 6. Which is the best buy of potatoes at $5.34 cents for 6 pounds or $9.00 for 10 pounds?

____

Unit 7

MEASUREMENT

E. Operations


1 Gal.
1 Gal.
1 Gal.
18 oz.

OBJECTIVES:

1. Add and subtract units of measure including cases where borrowing and carrying are required.
2. Multiply and divide units of measure.

UNIT: 7

TOPIC E: OPERATIONS

Chk:	Obj:	Source:	Work to do:
	1	Math, A Basic Course	READ: page 142; DO: page 143
	1	Math, A Basic Course	READ: page 144; DO: page 144
	2	Math, A Basic Course	READ: page 145; DO: page 145
	2	Math, A Basic Course	READ: page 146; DO: page 147

RAPID REVIEW

1. Add the following:

a. 6 ft. 4 in.
+7 ft. 6 in.

b. 4 ft. 8 in.
+8 ft. 6 in.

c. 6 hr. 50 min.
+5 hr. 10 min.

d. 6 lb. 6 oz.
+6 lb. 4 oz.

e. 4 gal. 2 qt.
+5 gal. 2 qt.

f. 4 wk. 5 da.
+4 wk. 2 da.

g. 5 lb. 8 oz.
+5 lb. 8 oz.

h. 6 gal. 3 qt.
+8 gal. 2 qt.

2. Subtract the following:

a. 6 lb. 9 oz.
-5 lb. 6 oz.

b. 7 lb. 4 oz.
-5 lb. 6 oz.

c. 8 ft. 2 in.
-3 ft. 8 in.

d. 5 yd. 6 in.
-3 yd. 8 in.

e. 18 yd. 2 ft. 7 in.
-6 yd. 1 ft. 9 in.

f. 5 gal. 2 qt. 1 pt.
-3 gal. 3 qt. 1 pt.

g. 9 lb. 5 oz.
- 8 oz.

RAPID REVIEW (continued)

3. Multiply the following:

a. 4 ft. 3 in. X4

b. 5 lb. 4 oz. X4

c. 3 gal. 2 qt. X2

4. Divide the following:

a. $3\overline{)6 \text{ lb. } 3 \text{ oz.}}$

b. $4\overline{)8 \text{ gal } 4 \text{ qt.}}$

c. $3\overline{)15 \text{ mi. } 150 \text{ ft.}}$

READY? DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 7

TOPIC E: OPERATIONS

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2	Refresher Math	READ: page 420 & 421 DO: green tests page 422, 425, 427, 429 (Do practice examples for any you missed.)

PROGRESS CHECK A

UNIT: 7

TOPIC E: OPERATIONS CRITERIA 5/6

DO ALL WORK IN YOUR EXERCISE BOOK.

(2) 1.a. Add:
6 ft. 8 in.
+ 3 ft. 5 in.

b. subtract:
5 ft. 2 in.
- 8 in.

(2) 2.
a. Add:
1 qt. 1 pt.
+1 qt. 3 pt.

b. subtract:
1 pt. 2 fl. oz.
- 10 fl. oz.

(2) 3.
a. Add:
5 lb. 6 oz.
+3 lb. 10 oz.

b. subtract:
5 lb. 6 oz.
- 10 oz.

PROGRESS CHECK B

UNIT: 7

TOPIC E: OPERATIONS CRITERIA 4/6

DO ALL WORK IN YOUR EXERCISE BOOK.

2) 1.
a. Add: 9 ft. 7 in.
+3 ft. 7 in.
b. Subtract: 6 ft. 4 in.
- 8 in.

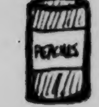
(2) 2.
a. Add: 2 gal. 3 qt.
+1 gal. 2 qt.
b. Subtract: 3 gal. 1 qt.
- 3 qt.

(2) 3.
a. Add: 4 lb. 8 oz.
+3 lb. 9 oz.
b. Subtract: 10 lb. 3 oz.
- 9 oz.

Unit 7

MEASUREMENT

F. Word Problems

Find the total weight of canned  if there are 24 cans that weigh 1 pound 3 ounces.

OBJECTIVES:

1. Use measurements to solve word problems.
- * Use the five step method of problem solving.
- * Show all work.
- * Reduce to lowest terms.

UNIT: 7

TOPIC F: WORD PROBLEMS

Chk:	Obj:	Source:	Work to do:
	1	Stars book	READ: Unit I-F word problems

REQUIRED REVIEW:

1. A plane has 5 hours of fuel on take-off. How many hours of fuel are left after 3 hours and 37 minutes?

2. Find the total weight of a case of canned peaches if there are 24 cans that weigh 1 pound 3 ounces.

3. The contract time for building the new school was 27 weeks 4 days. If they finished 6 days early how long did it actually take to build the school?

4. If three pieces of wood measuring 4 ft. 6 in., 7 ft. 9 in. and 5 ft. 8 in. were cut from a 20 foot board, what was the length of the piece left?

5. Find the difference in capacity of a can containing 1 qt. 14 oz. of grape juice and the total capacity of 2 smaller cans, each containing 1 pt. 4 oz.

6. Jane is 5 ft. 2 in. and her brother Jack is 6 ft. 4 in. tall. How much taller is Jack than Jane?

7. How far above the earth, to the nearest mile, is a plane flying at an altitude of 15,000 feet?

8. After four pieces each 1 ft. 5 in. long were cut from a board, a piece 4 in. long remained. What was the original length of the board?

9. If 12 pounds 8 ounces is divided equally among four people, how much does each receive?

10. A plane left the hanger at 9:35 a.m. and returned at 1:33 P.M. Find the flying time in hours and minutes.

READY? DO PROGRESS CHECK A

PROGRESS CHECK A

UNIT: 7

TOPIC F: WORD PROBLEMS CRITERIA 7/8

DO ALL WORK IN YOUR EXERCISE BOOK.

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 1. If a family buys 1 gallon of milk each day, how many quarts of milk does it buy in one year (365 days)?

(2) 2. How far can an airplane fly in 4 hours 45 minutes if its average ground speed is 570 miles per hour?

(2) 3. If a person's height is 6 ft. 2 in., what is her height in inches?

(2) 4. If frying chicken costs $1.30 per pound, what would be the value of a chicken which weighs 1 1/2 pounds? (Give answer to the nearest cent.)

PROGRESS CHECK B

UNIT: 7

TOPIC F: WORD PROBLEMS CRITERIA 7/8

DO ALL WORK IN YOUR EXERCISE BOOK.

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 1. If a family buys 2 pounds of spaghetti each day, how many pounds does it buy in one year (365 days)?

(2) 2. How many 16 fl. oz. cartons can be filled from four quarts of milk?

(2) 3. How many yards of cloth will be needed to make 9 banners if each banner is to be 1 yd. 12 in. long?

(2) 4. How many 16 oz. bags can be filled from 20 pounds of peanuts?

Unit 7

MEASUREMENT

G. Metric Distance

OBJECTIVES:

1. Identify millimetres, centimetres, metres and kilometres as units of distance in the metric system.
2. Define a unit of distance in terms of a given unit (i.e., *1 metre = 100 centimetres*).
3. Read and write abbreviations for millimetres (*mm*), centimetres (*cm*), metres (*m*), and kilometres (*km*).
4. Convert one unit of distance to another unit in the metric system.
5. Add and subtract units of distance including cases where borrowing is required.
6. Measure a given distance with a ruler or tape; measure to the nearest millimetre.
7. Use distance measurements in solving word problems (including problems involving time and distance).

METRIC SYSTEM CONVERSION TABLE

(N stands for the number you are changing)

km to m = N X 1000

km to cm = N X 100,000

km to mm = N X 1,000,000

m to km = N ÷ 1,000

m to cm = N X 100

m to mm = N X 1,000

cm to km = N ÷ 100,000

cm to m = N ÷ 100

cm to mm = N X 10

mm to km = N ÷ 1,000,000

mm to m = N ÷ 1,000

mm to cm = N ÷ 10

Example: 7,984 m = ____?____ km.

7,984 m ÷ 1,000 = 7.984 km

Now, get a copy of Refresher Mathematics and do sets 1,5, 11, and 15 on page 437, and set 20 on page 438. Also do set 1 of the "miscellaneous examples" on page 438.

UNIT: 7

TOPIC G: METRIC DISTANCE

Chk:	Obj:	Source:	Work to do:
	1,2,3, 4	STARS book	READ: "Information for Objectives 1,2,3,4"
		Refresher Math	DO: page 437 sets 1,5,11,15 and page 438 sets 20 and 1
	5	STARS book	READ: "Information for Obj. 5" DO: problems that follow.
	6	STARS book	READ: "Information for Obj. 6" DO: problems that follow.
	7	STARS book	Review Unit I, Topic F.

Information for Objectives 1, 2, 3, 4

As mentioned before, the basic unit of length or distance is the meter *(m.)*. Three other prefixes are commonly used with the meter. For large distances, the kilometer *(km = 1000 m)* is used. For lengths shorter than a meter, the centimeter *(cm = 1/100 m)* and the millimeter *(mm = 1/1000 m)* are used. The other prefixes are not commonly used with the meter.

At times you will need to change one unit of length to a smaller or larger unit of length. With the English system this can be difficult, but with the metric system it is easy. All you have to do is multiply or divide your number by some power of ten.

Here is a conversion table to help you change to different units of length. "N" stands for the number you are changing.

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Information for Objective 5

Metric units of distance are added or subtracted just like decimal numbers, because the metric system is a decimal system.

Example: *5.43 m + 2.88 m*

$$\begin{array}{r} 5.43\ \text{m} \\ +2.88\ \text{m} \\ \hline 8.31\ \text{m} \end{array}$$

Example: *8.085 km - 5.208 km*

$$\begin{array}{r} 8.085\ \text{km} \\ -5.208\ \text{km} \\ \hline 2.777\ \text{km} \end{array}$$

Now try the following problems:

a. $\begin{array}{r} 63.11\ \text{cm} \\ +\underline{25.65}\ \text{cm} \end{array}$

b. $\begin{array}{r} 47.88\ \text{mm} \\ -\underline{16.22}\ \text{mm} \end{array}$

c. $\begin{array}{r} 22.86\ \text{km} \\ +\underline{\ 9.53}\ \text{km} \end{array}$

d. $\begin{array}{r} 55.302\ \text{km} \\ -\underline{\ 49.711}\ \text{km} \end{array}$

Information for Objective 6

A metric ruler is marked off in centimeters and each centimeter is divided into ten millimeters. It is usually used for measuring short distances.

A meter stick is marked off in decimeters (1/10 of a meter), and each decimeter is divided into ten centimeters (sometimes the centimeters are divided into millimeters, like on the metric ruler).

ACTIVITY:

Use a metric ruler or a meter stick to make the following measurements:

1. The height of a friend.
2. The width of a window pane.
3. The width of a door.
4. The height of your desk top from the floor.
5. The length of your classroom.

UNIT: 7

TOPIC G: METRIC DISTANCE

RAPID REVIEW

REMEMBER

1. Units of length can be changed by multiplying or dividing by a power of ten.
2. 10 of one unit makes 1 of the next higher unit.

1. Change 63 m to km.

REMEMBER

1. Units of length can be added or subtracted just like decimal numbers.

2. $\begin{array}{r} 65.03 \text{ m} \\ \underline{+28.13} \text{ m} \end{array}$

3. $\begin{array}{r} 5.00 \text{ km} \\ \underline{-3.29} \text{ km} \end{array}$

READY? OK, DO PROGRESS CHECK A

NOT READY? OK, DO SOME MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

UNIT: 7

TOPIC G: METRIC DISTANCE

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	4	Spectrum Purple	DO: page 129, 1-6 DO: page 130, 1-11

PROGRESS CHECK A

UNIT: 7

TOPIC G: METRIC DISTANCE CRITERIA 15/16

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. Check ( ) the words below which are units of distance.

____*metres* ____*seconds* ____*kilometres* ____*litres*

(6) 2. Fill in the blanks:

a. 37 mm = ____m *d. 13 cm = ____mm*

b. 1 m = ____cm *e. 175 m = ____km*

c. 2.5 km= ____cm *f. 2 mm = ____cm*

(2) 3.a) Add:

$$\begin{array}{r} 3.50 \text{ m} \\ \underline{4.80} \text{ m} \end{array}$$

b) Subtract:

$$\begin{array}{r} 4.000 \text{ km} \\ \underline{2.200} \text{ km} \end{array}$$

(1) 4. Measure the line to the nearest millimetre:

____ = ______mm

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 5. How long are each of the pieces when a 2 metre board is cut into 4 equal pieces?

(2) 6. How long will it take to go 315 kilometres at a speed of 70 kilometres?

(2) 7. If in your town the blocks are 150 metres long, how many blocks, (to the nearest block), are there in a kilometre?

PROGRESS CHECK B

UNIT: 7

TOPIC G: METRIC DISTANCE CRITERIA 14/16

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. Check ( ) the words below which are units of distance.

____*seconds* ____*centimetres* ____*metres* ____*kilograms*

(6) 2. Fill in the blanks:

a. 28 mm = ______m

b. 2 m = ______cm

c. 1.5 km = ______cm

d. 15 cm = ______mm

e. 225 m = ______km

f. 4 mm = ______cm

(2) 3. a. Add: *3.28 m*
2.79 m

b. Subtract: *5.000 km*
2.300 km

(1) 4. Measure the line to the nearest millimetre.

____ = ______ *mm*

PROBLEMS: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

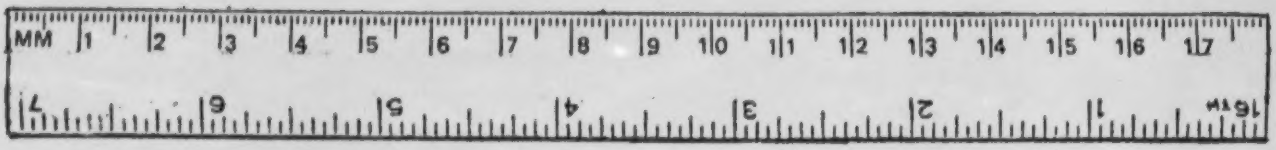
(2) 5. How many metres of ribbon are required when seven 60 centimetre pieces are needed?

(2) 6. What speed would you have to travel to go 280 kilometres in 3 1/2 hours?

(2) 7. If each step in a stairway is 22 cm higher than the one below it, how many metres is it from the main floor to the next floor if there are 30 steps?

MEASUREMENT IN INCHES

READING A SECRET CODE


MM
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
16TH
1 2 3 4 5 6 7

Find each number on the ruler above. At the point where you found that measurement, write the letter that accompanies it in the list.

When you have located all of them correctly, you will have spelled a message.

A--2 1/4 in.

A--2 7/8 in.

B--1/4 in.

C--4 15/16 in.

D--1 in.

E--2 3/4 in.

E--3 7/16 in.

E--2 5/8 in.

E--6 3/8 in.

E--6 3/4 in.

F--1 7/8 in.

F--2 1/2 in.

F--4 1/4 in.

G--6 1/4 in.

H--3 3/8 in.

H--6 5/8 in.

H--3 3/8 in.

K--5 in.

L--4 1/2 in.

O--5 15/16 in.

O--1 3/4 in.

O--4 11/16 in.

R-3/4 in.

R--3 3/4 in.

R--6 15/16 in.

S--1 1/4 in.

Unit 7

MEASUREMENT

H. Metric Weight

OBJECTIVES:

THE STUDENT MUST BE ABLE TO:

1. Identify milligrams, grams, kilograms and metric tons as units of weight measure in the metric system.
2. Define a unit of weight measure in terms of a given unit, (i.e. *1 kilogram = 1000 grams)*.
3. Read and write abbreviations for milligrams (*mg*), grams (*g*), kilograms (*kg*) and metric tons (*t*).
4. Convert one unit of weight measure to another unit in the metric system.
5. Add and subtract weight measures including cases where borrowing is required.
6. Use weight measurements in solving word problems (including cases where cost per unit of weight is required to determine best value).

UNIT: 7

TOPIC H: METRIC WEIGHT

Chk:	Obj:	Source:	Work to do:
	1,2,3 4	STARS book	READ: "Information for Objectives 1,2,3,4", DO: page 439 "Practice examples A", 1,5,11, & 15 and "practice examples B", 1,5,11 & 15
	5	STARS book	READ: "Information for Objective 5" DO: problems that follow
	6	STARS book	Review Unit I, Topic F

Information for Objectives 1, 2, 3, 4

As mentioned earlier, the basic unit of metric weight is the gram *(g)*. Three other prefixes are commonly used with the gram. For very light weights there is the milligram *(mg = 1/1000 g)*. For heavier weights there is the kilogram *(kg = 1000 X g)*, and for very heavy weights there is the metric ton *(t = 1000 kg or 1,000,000 g)*. The other prefixes *(hecto-, deka-, deci-, and cent-)* are not frequently used with the gram.

When changing one unit of weight to a smaller or larger unit of weight, simply multiply or divide by some power of ten, just as you do for meters and liters.

Here is a conversion table to help you change to different units of weight.

t to kg = N X 1000

t to g = N X 1,000,000

t to mg = N X 1,000,000,000

kg to t = N ÷ 1,000

kg to g = N X 1,000

kg to mg = N X 1,000,000

g to t = N ÷ 1,000,000

g to kg = N ÷ 1,000

g to mg = N X 1,000

mg to t = N ÷ 1,000,000,000

mg to kg = N ÷ 1,000,000

mg to g = N ÷ 1,000

Example: 6 g = ___?___ mg
6 g X 1000 = 6,000 mg

Now get a copy of Refresher Math and do page 440, "practice examples A", questions 5, 10, 11, 16, 21 and 22. Then do "practice examples B", questions 5, 10, 11, 16, 21, and 22.

Information for Objective 5

Again, add or subtract metric weights just as you would decimal numbers.

Example 1:	*Example 2:*
6.24 g +7.36 g	439.65 kg -163.96 kg

Now try the following problems:

a.	b.	c.	d.
106.5 mg +503.8 mg	47.8 t +39.6 t	587.01 g -392.48 g	651.7 kg - 29.2 kg

RAPID REVIEW

REMEMBER

```
***********************************************************
*  1.   Units of weight can be changed by multiplying     *
*       or dividing by a power of 10.                     *
*                                                         *
*  2.   10 of one unit makes 1 of the next higher unit.   *
***********************************************************
```

1. *change 46 kg to g.*

2. a. 87.9 mg
+52.6 mg

b. 391.74 kg
-265.81 kg

READY? OK, DO PROGRESS CHECK A

NOT READY? SEE YOUR TEACHER FOR FURTHER HELP

PROGRESS CHECK A

UNIT: 7

TOPIC H: METRIC WEIGHT CRITERIA 14/15

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. Check ( ) the words below which are units of weight measure.

____*cubic centimetres* ___*kilograms* ___*metres* ___*litres*

(4) 2. Fill in the blanks:

a. 1 kg = _____g *c. 375 g = _____kg*

b. 200 kg = _____t *d. 38 mg = _____g*

(2) 3. *a. Add:* $\begin{array}{r} 3.040 \text{ g} \\ \underline{+7.975} \text{ g} \end{array}$ *b. Subtract:* $\begin{array}{r} 2.100 \text{ mg} \\ \underline{-\ .800} \text{ mg} \end{array}$

(2) 4. Find the cost per gram in each of the following to the nearest cent:

a. 12 g costs 48 cents ______________________

b. 1 kg costs $8.28 ________________________

(2) 5. Find the cost per kilogram in each of the following to the nearest cent:

a. 250 g costs 27 cents ______________________

b. 2 1/2 kg costs $1.20 ______________________

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 6. If the freight charges on a certain carrier are $5.00 per 100 kilograms, what will it cost to ship a crate of furniture weighing 750 kilograms?

(2) 7. Which is the best buy of toothpaste at 89 cents for 60 ml or $1.15 for 100 ml?

PROGRESS CHECK B

UNIT: 7

TOPIC H: METRIC WEIGHT CRITERIA 13/15

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. Check ( ) the words below which are units of weight measure.

___*grams* ___*kilograms* ___*centimetres* ___*millilitres*

(4) 2. Fill in the blanks:

a. 550 g = _____kg

b. 2,000 kg = _____t

c. 2700 mg = g

d. 25 g = _____mg

(2) 3. *a. Add:* $\begin{array}{r} 5.200 \text{ kg} \\ \underline{1.710} \text{ kg} \end{array}$ *b. Subtract:* $\begin{array}{r} 2.000 \text{ g} \\ \underline{1.450} \text{ g} \end{array}$

(2) 4. Find the cost per gram in each of the following to the nearest cent:

a. 20 gm costs 60 cents ______________________

b. 1 1/2 kg costs $7.48 ______________________

(2) 5. Find the cost per kilogram in each of the following to the nearest cent:

a. 10 kg costs $5.20 ______________________

b. 32 g costs 6 cents ______________________

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 6. Calculate the value of stamps required to send a 120 g letter at rates of 8¢ for 30 g and 6¢ for each additional 30 grams.

(2) 7. Which is the best buy of toothpaste at 99¢ for 227 g or $1.90 for 450 g?

Unit 7

MEASUREMENT

I. Metric Liquid

OBJECTIVES:

THE STUDENT MUST BE ABLE TO:

1. Identify millilitres, centilitres, litres and cubic centimetres as units of liquid measure in the metric system.
2. Define a unit of liquid measure in terms of a given unit *(i.e., 1 litre = 1000 ml)*.
3. Read and write abbreviaitons for millilitres (*ml*), centilitres (*cl*), litres (*l*) and cubic centimetres (*cc*).
4. Convert one unit of liquid measure to another unit in the metric system.
5. Add and subtract units of liquid measure including cases where borrowing is required.
6. Use liquid measurements in solving word problems, (including problems where cost per unit of liquid is required to determine best value).

UNIT: 7

TOPIC I: METRIC LIQUID MEASURE

Chk:	Obj:	Source:	Work to do:
	1,2,3, 4	STARS book	READ: "Information for Objectives 1,2,3,4"
		Refresher Math	DO page 440, "Practice examples A", 5,10,11,16,21,22 and "Practice examples B", 5,10,11,16,21,22
	5	STARS book	READ: "Information for Objective 5" DO: problems that follow
	6	STARS book	Review Unit I, Topic F

Information for Objectives 1, 2, 3, 4

As mentioned in the introduction to the metric system, the basic unit of liquid measure is the liter (*l*). Two other prefixes are commonly used with the liter, both of which stand for liquid amounts smaller than a liter: the centiliter (*cl = 1/100 l*) and the milliliter (*ml = 1/1000 l*). The other prefixes (*hilo-, hecto-, deka-, and deci-*) are not frequently used with the liter.

To change one unit of liquid measure to a smaller or larger unit, all you have to do is multiply or divide your number (*N*) by some power of ten, just the way you do with meters. Here is a conversion table to help you change the different units of liquid measure.

l to cl = N X 100

l to ml = N X 1000

cl to l = N ÷ 100

cl to ml = N X 10

ml to l = N ÷ 1000

ml to cl = N ÷ 10

Example: *10 l = __?__ ml*
10 l X 1000 = 10,000 ml

Now get a copy of Refresher Math and do page 439, "Practice examples A", questions 1,5,11, and 15. In "practice examples B" do questions 1,5,11, and 15.

Information for Objective 5

Metric liquid measures are added or subtracted the same way that metric distances is. See the topic on addition and subtraction of distance.

Example 1:	*Example 2:*
4.80 l	*5.1 cl*
+3.92 l	*-2.9 cl*
8.72 l	*2.2 cl*

Now try the following problems:

a.	b.	c.	d.
16.72 l	*25.6 cl*	*756 ml*	*594.8 l*
+ 5.38 l	*+47.1 cl*	*-384 ml*	*-312.0 l*

RAPID REVIEW

REMEMBER

1. Units of liquid measure can be changed by multiplying or dividing by a power of 10.

2. 10 of one unit makes 1 of the next higher unit.

1. Change 123,600 g to kg.

2. a. *500 t*
+284 t

b. *579.84 kg*
-261.37 kg

READY? OK, DO PROGRESS CHECK A
NOT READY? SEE YOUR TEACHER FOR FURTHER HELP.

PROGRESS CHECK A

UNIT: 7

TOPIC I: METRIC LIQUID MEASURE CRITERIA 13/14

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. Check ( ) the words below which are units of liquid measurement.

___*kilograms* ___*litres* ___*metres* ___*millilitres*

(4) 2. Fill in the blanks:

a. 1 l = _____ml *c. 750 ml = _____cl*

b. 25 cl = _____ml *d. 250 ml = _____l*

(2) 3. *a. Add: 2.50 l* *b. Subtract: 2.200 l*

3.70 l *.500 l*

(5) 4. Find the cost per ml in each of the following to the nearest 1/10 cent.

a. 10 ml for 15 cents ____________________

b. 12 cl for $2.12 ____________________

c. 16 ml for 22 cents ____________________

d. 48 ml for 35 cents ____________________

e. 2.5 cl for 88 cents ____________________

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 1. A 12-ml bottle of lotion costs 79 cents while a 20-ml bottle costs $1.10. Find the cost per millilitre (nearest 1/10 cent) in each and the best buy.

PROBLEMS:

1. a. 12 ml ____________________ cents per millilitre

   b. 20 ml ____________________ cents per millilitre

   c. Best buy ____

PROGRESS CHECK B

UNIT: 7

TOPIC I: METRIC LIQUID MEASURE CRITERIA 12/14

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. Check ( ) the words below which are units of liquid measurement.

___*metres* ___*centilitres* ___*kilograms* ___*millilitres*

(4) 2. Fill in the blanks:

a. 28 ml = _____cl

b. 2 1/2 l = _____ml

c. 5 cl = _____ml

d. 2 l = _____cl

(2) 3. *a. Add:* $\begin{array}{r} 4.30\ l \\ \underline{3.80}\ l \end{array}$ *b. Subtract:* $\begin{array}{r} 1.200\ l \\ \underline{.800}\ l \end{array}$

(5) 4. Find the cost per ml in each of the following to the nearest 1/10 cent.

a. 28 ml for 30 cents ________________________

b. 32 ml for $12.40 ________________________

c. 12 cl for 75 cents ________________________

d. 8 ml for 10 cents ________________________

e. 4 1/2 cl for $1.00 ________________________

PROBLEMS: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 5. A soft drink in a 200 ml bottle costs 15 cents and the same drink in a 1/2 l bottle costs 32 cents. What is the cost per ml in each? (Nearest 1/100 cent.)

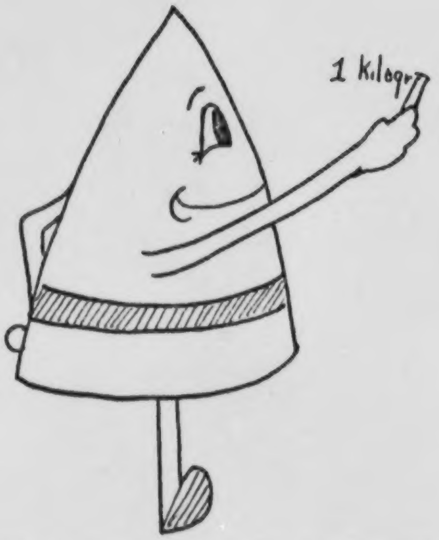
a. 200 ml ______________________________

b. 1/2 l ______________________________

Unit 7

MEASUREMENT

J. Metric Word Problems



OBJECTIVE:

1. Apply the 5-step method for solving word problems.

* Show all work.

* All answers must be labeled.

UNIT: 7

TOPIC J: METRIC WORD PROBLEMS

Chk:	Obj:	Source:	Work to do:
	1	STARS book	READ: Unit I-F, word problems DO: page 442-443, problems 1,2,3, 4,8, and 10

REQUIRED REVIEW

1. If 100 g of chocolate candy costs 52¢, how much would 2 kg cost?

2. How many 2 g nails would there be in a 3 kg box of nails?

3. Which would be cheaper to buy per gram: 1 kg of beans at $1.50, or 400 g of beans at 64¢?

4. If the price of steel went up $10 per metric ton, what was the increase per kilogram?

5. Five people ran in the 1500 meter race. What is the length of this race in kilometers?

6. A case of canned fruit weighs 6 kg. If there are 24 cans in a case, how many grams does each can weigh?

7. A typewriter ribbon is 50 meters long. How many centimeters is this?

8. Four glasses of milk can be poured from a 1 l milk bottle. How many centiliters would each glass contain?

9. A 15 h.p. outboard motor uses 2 l of gas every 7 km. At this rate, how many liters would be needed for a trip of 56 km?

10. An automobile wheel goes 1.2 m in one revolution. How many times does it revolve in 1 km? (answer to nearest whole revolution.)

UNIT: 7

TOPIC J: METRIC WORD PROBLEMS

REQUIRED REVIEW (continued)

11. A bag of rice weighs 2 kg. If there are 25,000 grains of rice in each bag, what would the average weight of each grain be in milligrams?

12. Cirrus clouds sometimes reach 12,000 meters above the earth. How high is this in kilometers?

13. A can of pop contains 300ml of liquid. How many cans would it take to make 6 l?

14. Jim is 1.8 m tall, and Carol is 1.59 m tall. What is the difference between their heights in cm?

15. Oil can be bought in a 20 l container for $18.95 or in 500 ml cans for 50¢ a can. How much money would be saved by buying 20 l in the container instead of the cans?

16. In an olympic pool, 1 lap is 50 m long. How many laps would you have to swim to go 2 km?

17. What is the ratio of 50 ml to 3 cl?

18. A family used 852 cans of milk one year. If each can contained 600 ml of milk how many liters of milk did they use?

19. An airplane can carry 120 metric tons of freight. How many kilograms is this?

20. A 10 cm length of string will stretch 1.2 times its length when wet. How many millimeters longer does it get when wet?

READY? OK, DO PROGRESS CHECK A

NOT READY? SEE YOUR TEACHER FOR FURTHER HELP

PROGRESS check A

UNIT: 7

TOPIC J: METRIC WORD PROBLEMS CRITERIA 7/8

DO ALL WORK IN YOUR EXERCISE BOOK.

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 1. If a family buys 3 litres of milk each day, how many litres of milk does it buy in one year (365 days)?

(2) 2. How far can an airplane fly in 4 hours 45 minutes if its average ground speed is 625 kilometres per hour?

(2) 3. If a person's height is 1 m 50 cm 9 mm, what is his height in centimetres?

(2) 4. If frying chicken costs $1.75 per kilogram, what would be the value of a chicken which weighs 1 kilogram 450 grams? (Give answer to the nearest cent.)

PROGRESS CHECK B

UNIT: 7

TOPIC J: METRIC WORD PROBLEMS

DO ALL WORK IN YOUR EXERCISE BOOK.

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

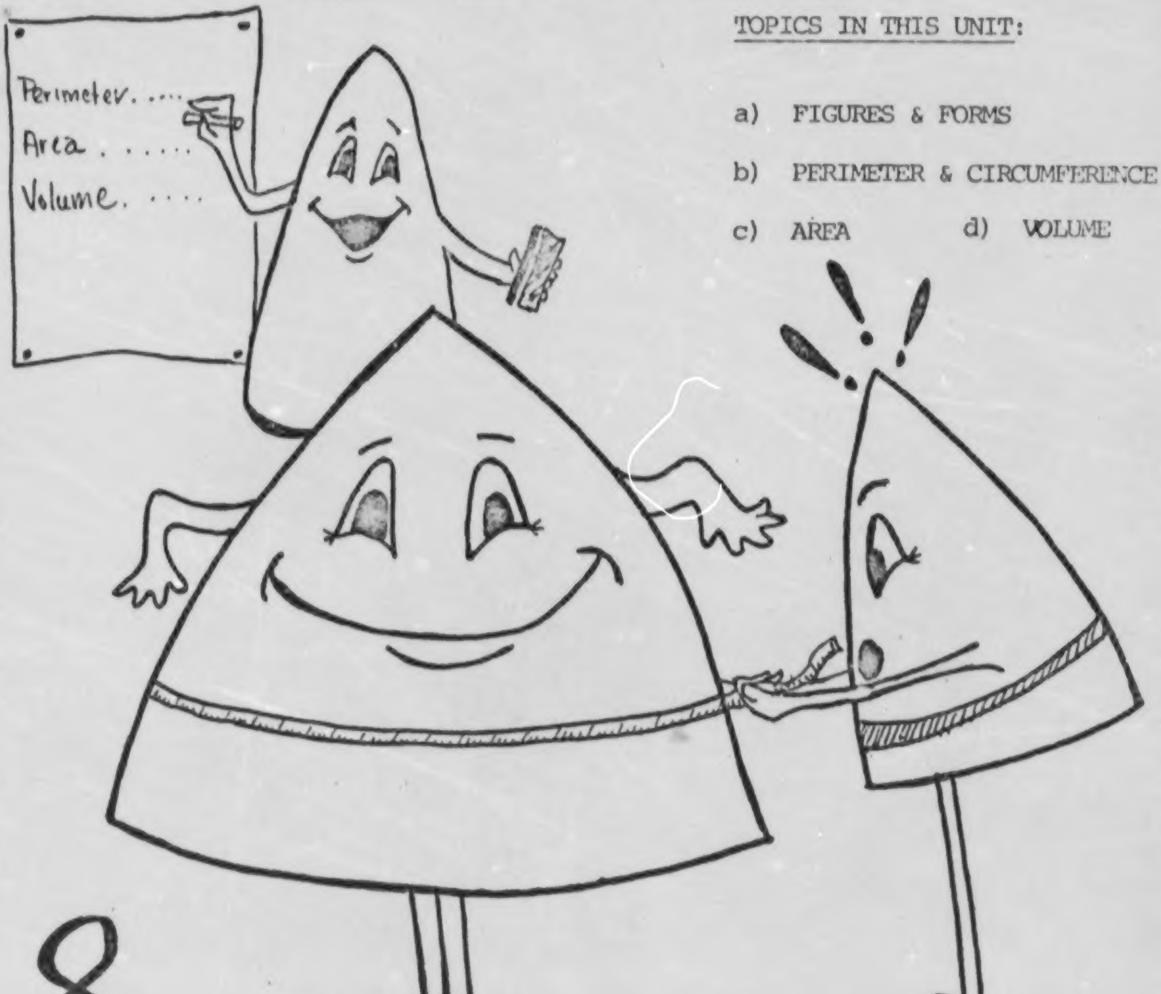
(2) 1. If a family buys a 750 gram loaf of bread each day, how many kilograms of bread does it buy in one year (365 days)?

(2) 2. How many 250 millilitre cartons can be filled from four 100 litre cans of milk?

(2) 3. How many metres of cloth will be needed to make 8 banners if each banner is to be 1 m 250 cm long?

(2) 4. How many 125 gram bags can be filled from 20 kilograms of peanuts?

PERIMETER, AREA VOLUME


Perimeter.....
Area.....
Volume.....

TOPICS IN THIS UNIT:

a) FIGURES & FORMS

b) PERIMETER & CIRCUMFERENCE

c) AREA

d) VOLUME

8.

Unit 8.

PERIMETER, AREA, and VOLUME

A. Figures and Forms

OBJECTIVES:

1. Identify figures as plane figures which have area and identify forms as objects which have volume.
2. Identify common examples of figures and forms with a figure or form name (i.e., canned soup - *CYLINDER*; a room - *RECTANGULAR SOLID*).
3. Identify squares, rectangles, triangles, circles, cubes, rectangular solids, cylinders, cones, and pyramids from a set of pictures or objects.
4. Identify squares, rectangles, triangles, circles, cubes, rectangular solids, and cylinders given their characteristics.
5. Label the parts of a given circle (circumference, radius, diameter, centre).
6. Use a set square or ruler and compass to draw a rectangle of given dimensions.
7. Draw a circle of given radius or diameter with a compass.

UNIT: 8

TOPIC A: FIGURES & FORMS

Chk:	OBJ:	SOURCE:	WORK TO DO:
	1,2, 3,4	Math, A Basic Course	READ & DO: pages 336, 337,341,343,345,346, 368,370
	5,7	Math, A Basic Course	READ & DO: page 365
	6	Math, A Basic Course	READ & DO: pages 332, 333

RAPID REVIEW:

1. *Explain the difference between figure and form.*

____

____

2. *Draw and label the parts of a circle:*

READY? DO PROGRESS CHECK 'A'.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE FOLLOWING PAGE.

EXTRA PRACTICE:

Chk:	Obj:	SOURCE:	WORK TO DO:
	1,2, 3,4	Refresher Math	READ & DO: pages 313-316.

254

progress check A

UNIT 8

TOPIC A: FIGURES & FORMS CRITERIA: 18/20

DO ALL WORK IN YOUR EXERCISE BOOK:

(5) 1. Identify each of the following as a figure or form by writing *'figure'* or *'form'* beside each:

a) triangle ____________

b) cube ____________

c) cone ____________

d) cylinder ____________

e) rectangle ____________

(5) 2. What figures or forms are represented by the following objects?

a) a canned soft drink

b) a lump of sugar

c) a wheel rim

d) a dollar bill

e) a ball

(2) 3. Write the name of the figure or form described:

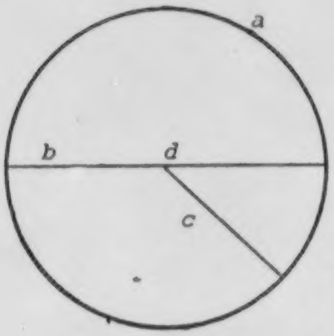
a) Figure with equal sides and square corners:

____

b) A form with circles at both ends:

____

(4) 4. In the figure, give the name of the parts indicated by the letters:



a) ____________

b) ____________

c) ____________

d) ____________

(2) 5. Draw a rectangle with a length of 5 centimeters and a width of 2 centimeters.

(2) 6. Draw a circle of radius 2-1/2 cm.

progress check B

UNIT: 8

TOPIC A: FIGURES & FORMS CRITERIA: 18/20

DO ALL WORK IN YOUR EXERCISE BOOK:

(5) 1. Check ( ) those of the following which are figures:

*a) square*________ *d) circle*__________

*b) pyramid*_______ *e) triangle*________

*c) cone*__________

(5) 2. What figures or forms are represented by the following objects?

a) dice *d) this page*

b) a box *e) a dime*

c) a can of oil

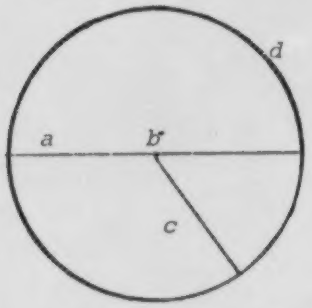
(2) 3. Write the name of the figure or form described:

*a) A figure with 3 sides*________________________________.

b) A form which has 6 sides which are all rectangles:

____

(4) 4. In this figure give the names of the parts indicated by the letters:



*a)*________________________

*b)*________________________

*c)*________________________

*d)*________________________

(2) 5. Draw a rectangle with length of 12 centimeters and width of 3 centimeters.

(2) 6. Draw a circle 3 centimeters in diameter.

Unit 8.

PERIMETER, AREA, and VOLUME

B. PERIMETER and CIRCUMFERENCE

OBJECTIVES:

1. Identify perimeter as a distance or length measurement and state units used (*in., ft., yd., mi., mm, cm, m*).
2. Define perimeter as the length of the *OUTER BOUNDARY* of a plane figure.
3. Measure perimeters of given figures by successive ruler measurements.
4. Calculate the perimeter of a given square using the formula $P = 4_s$.
5. Calculate the perimeter of a given rectangle using the formula $P = 2l + 2_w$.
6. Identify circumference of a cirle as a measure of the circle's perimeter.
7. Identify π as a constant for all circles such that $C = \pi D$ or $C/D = \pi$, and as having a value of approximately $3\text{-}1/7$ or $22/7$.
8. Calculate the circumference (perimeter) of a given circle given either radius or diameter and using the formulas: $C = 2\pi R$ $C = \pi D$.
9. Solve routine word problems involving perimeter.

UNIT: 8

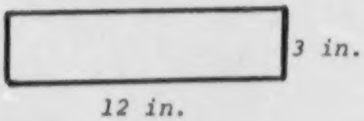
TOPIC B: PERIMETER & CIRCUMFERENCE

Chk:	Obj:	Source:	Work to do:
	1,2, 4,5	Math, A Basic Course	READ & DO: pages 346 - 349.
	6,7, 8	Math, A Basic Course	READ & DO: pages 365, 366

RAPID REVIEW:

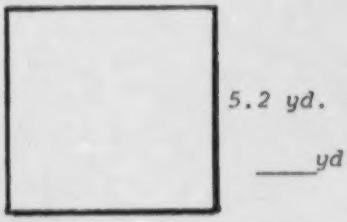
Find the perimeter (or circumference) of each figure below. Use 3.14 for π .

1. a

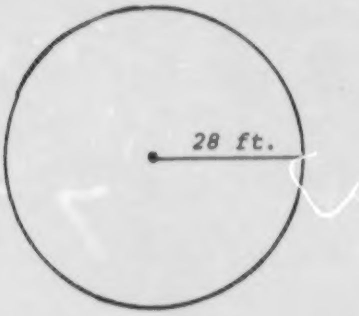


____in.

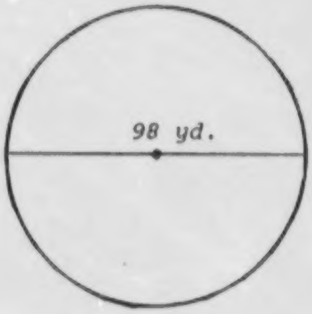
b



____yd.



____ft.



____yd.

READY? DO PROGRESS CHECK 'A'.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE FOLLOWING PAGE.

Chk:	Obj:	Source:	Work to do:
	1,2, 3,4, 5	Refresher Math	READ & DO: pages 317, 318
	6,7, 8	Refresher Math	READ & DO: pages 319 - 321

PROGRESS CHECK A

UNIT: 8

TOPIC B: PERIMETER & CIRCUMFERENCE CRITERIA 13/14

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Perimeter is a measure of: (check one)

_____*length* _____*area* _____*weight*

(1) 2. Perimeter could be measured in: (check one)

_____*kg* _____*cm* _____*sq. cm*

(1) 3. The perimeter of a figure is the:__________

____

(1) 4. Measure the perimeter of this page in centimeters:____________

(2) 5. Calculate the perimeter of a square which is 4cm on each side. *SHOW YOUR WORK*

*Formula:*____________________

*Perimeter:*__________________

(2) 6. Calculate the perimeter of a rectangle which is 8 meters by 3 meters. *SHOW YOUR WORK*

*Formula:*____________________

*Perimeter*____________________

(1) 7. To find the perimeter of a circle we find the length of its:

____

(1) 8. A constant called *pi* (π) for all circles is approximately 3-1/7 and is a value found by dividing the__________________of a circle by its______________________.

(2) 9. Find the circumference of a circle of diameter 3-1/2 cm. *SHOW YOUR WORK* *Use 22/7 for* π .

Formula: ________________

(circumference) Perimeter ________________

PROBLEMS: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct anser.

(2) 10. If picture framing is $2.50 per meter what does it cost to frame a 2 meter by 3 meter picture? *SHOW YOUR WORK*

____

PROGRESS CHECK B

UNIT: 8

TOPIC B: PERIMETER & CIRCUMFERENCE CRITERIA 12/14

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Perimeter is a measure of: (check one)

_____ *area* _____ *space* _____ *length*

(1) 2. Perimeter could be measured in: (check one)

____ *kilometers* ____ *sq.meters* ____ *cubic meters*

(1) 3. When we find the perimeter of a figure we find:

____

(1) 4. Measure the perimeter of a dollar bill: ________

(2) 5. Calculate the perimeter of a square which is 12 cm on each side. *SHOW YOUR WORK*

Formula: ______________

Perimeter: ____________

(2) 6. Calculate the perimeter of a rectangle which is 8 cm long and 6 cm wide. *SHOW YOUR WORK*

Formula: ______________

Perimeter: ____________

(1) 7. The perimeter of a circle is the length of its ____________________.

(1) 8. If you divide the circumference of a circle by its diameter, you get a number called ____________ which is about 3-1/7.

(2) 9. What is the circumference of a circle of radius 7 cm? *SHOW YOUR WORK* *Use 22/7 for* π.

Formula: ______________

Circumference: ________

PROBLEMS: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 10. What will it cost to fence a 60m by 110m lat at 60¢ per meter? _SHOW YOUR WORK_

Unit 8. PERIMETER, AREA, and VOLUME

C. AREA

OBJECTIVES:

1. Identify area as the measurement of the surface of a figure and state units used (*sq.in., sq.ft., sq.yd., sq.mi., sq.mm., sq.cm., sq.m*).
2. Define squaring a number by using an example such as *3 squared means* 3×3 and square given numbers.
3. Use exponential notation for writing squares (A^2).
4. Caluculate the area of a given square using the formula $A = S^2$.
5. Define square root by using an example such as *square root of 9 means 3 because* $3 \times 3 = 9$, and write square roots of perfect squares to 144.
6. Find the length of the side of a square given the area and the formula $A = S^2$ (*area of a perfect square not greater than 144*).
7. Find the area of a given rectangle using the formula $A = LW$.
8. Identify the base and height in a given triangle.
9. Calculate the area of a given triangle using the formula $A = \frac{1}{2}BH$.
10. Calculate the area of a given circle using the formula $A = \pi R^2$.
11. Solve practical problems involving area calculations of squares, rectangles, triangles and circles, including conversion from one unit to another (i.e., *9 square feet = 1 square yard*).

UNIT: 8

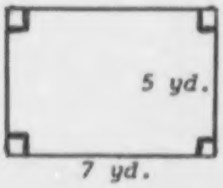
TOPIC C: AREA

Chk:	Obj:	Source:	Work to do:
	2,3, 5	Math, A Basic Course	READ & DO: pages 351 - 354
	4,7, 9	Math, A Basic Course	READ & DO: pages 356 - 362
	10	Math, A Basic Course	READ & DO: page 367

RAPID REVIEW:

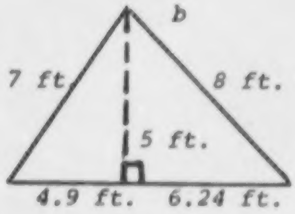
Find the area of each figure below. Use 3.14 for π .

a



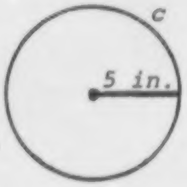
_____sq.yd.

b


7 ft
8 ft.
5 ft.
4.9 ft.
6.24 ft.

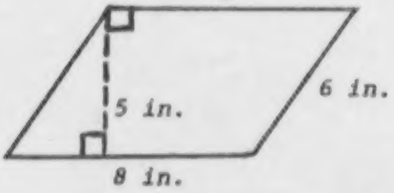
______sq.ft.

c



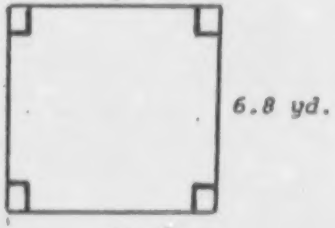
____in.

d



____sq.in.

e



____sq.yd.

READY? DO PROGRESS CHECK 'A'.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE FOLLOWING PAGE.

PRACTICE EXCERCISES:

Chk:	Obj:	Source:	Work to do:
	1	Refresher Mathematics	READ & DO: pages 366 - 368
	7	" "	READ & DO: pages 371, 372
	4	" "	READ & DO: pages 372, 373
	9	" "	READ & DO: page 374
	2,3	" "	READ & DO: pages 256, 257
	10	" "	READ & DO: pages 375, 376
	11	" "	READ & DO: pages 263, 257, 370, 372 - 374

progress check A

UNIT: 8

TOPIC C: AREA CRITERIA 18/19

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Area is a measure of: (check one)

______*length* ______*Surface*

______*space*

(1) 2. Area could be measured in: (check one)

_____*meters* ___*cubic meters* ___*sq.meters*

(1) 3. 5^2 means:________________________________

(3) 4. Square these numbers:

*a) 3*______ *b) 7*______ *c) 6*______

(2) 5. What is the area of a square which is 4 cm on each side:

*Formula*____________ *Area*________________

(2) 6. What is the square root of each of these numbers:

a) 16 = _____ *b) 18 =* ______

(1) 7. How long is the side of a square of area 64 sq. cm?

____

(2) 8. What is the area of this page? *SHOW YOUR WORK* *Use metric measurement.*

*Formula*____________ *Area*________________

(2) 9. What is the area of a triangle which is 2 m in height and has a base of 3 m? *SHOW YOUR WORK*

*Formula*____________ *Area*________________

(2) 10. What is the area of a circle which is 14 centimeters in diameter? *SHOW YOUR WORK* *Use 22/7 for* π .

*FORMULA*________________ *AREA*________________________

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 11. What will it cost to put new floor tile on a room 4 meters by 5 meters if the tile costs $4.95 per square meter?

____

____

____

UNIT: 8

PROGRESS CHECK B

TOPIC C: AREA CRITERIA 17/19

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Area is a measure of: (check one)

____*weight* ____*length* ____*space* ____*surface*

(1) 2. Area could be measured in: (check one)

____*square cm* ____*cubic cm* ____*cm*

(1) 3. a^2 means:____

(3) 4. Find the value of each of these:

a) 8^2________ *b)* 11^2________ *c)* 6^2________

(2) 5. What is the area of a square which is 3 m on each side?

*Formula:*________________ *Area:*__________________________

(2) 6. What is the square root of each of these?

a) 36 = ______ *b) 144 =* ______

(1) 7. What is the side of a square of area 100 sq. cm?

____

(2) 8. Find the area of a dollar bill. *SHOW YOUR WORK*

*Formula:*____________________ *Area:*__________________*sq.cm.*

(2) 9. What is the area of a triangle which has a base of 15 meters and a height of 10 meters? *SHOW YOUR WORK*

*Formula:*______________________ *Area:*______________________

(2) 10. Find the area of a circle which has a radius of 14 centimeters. *SHOW YOUR WORK* *Use 22/7 for* π .

Formula: ________________ *Area:* __________________

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 11. At $10.00 per sq. m , what will it cost to carpet a room which is 4 m by 4 m?

____

____

____

Unit 8.

PERIMETER, AREA, and VOLUME

D. Volume

OBJECTIVES:

The student must be able to:

1. Identify cubes, rectangular solids, cylinders, and spheres as *FORMS*.
2. Define volume as a measure of space enclosed by the given *FORM* and state units used *(cu. in., cu. ft., cu. yd., cu. mm, cu. cm, cu. m)*.
3. Calculate the volume of a given rectangular solid (including cubes) using the formula $V = LWH$.
4. Calculate the volume of a given cylinder using the formula $V = \pi R^2 H$.
5. Solve practical problems involving volume calculations of rectangular solids and cylinder, including conversion from one unit to another (for example, *27 cubic feet = a cubic yard*).

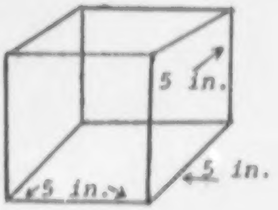
UNIT: 8

TOPIC D: VOLUME

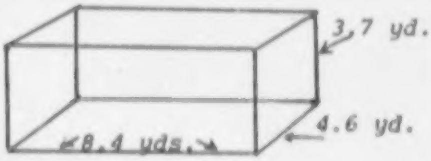
Chk:	Obj:	Source:	Work to do:
	1	Math, A Basic Course	READ & DO: pages 368-370
2,3, 4		Math, A Basic Course	READ & DO: pages 371-374

RAPID REVIEW:

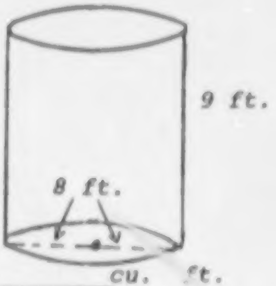
Find the volume of each figure below. Use 3.14 for π .



a)________cu.in.


3.7 yd.
4.6 yd.
8.4 yds.

b)_______ cu. yd.



c)________cu. ft.

READY? DO PROGRESS CHECK 'A'.

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

UNIT: 8

TOPIC D: VOLUME

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	3	Refresher Math	READ & DO: pages 385-387
	4	Refresher Math	READ & DO: pages 387-388
	5	Refresher Math	READ & DO: pages 386-388

273

PROGRESS CHECK A

UNIT: 8

TOPIC D: VOLUME — CRITERIA 10/11

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Check the words below which are names of forms:

____*cube* ____*meter* ____*triangle* ____*cylinder*

(1) 2. Volume is a measure of________________________________

____

(3) 3. State three metric units used in measuring volume:

____________ ____________ ____________

(2) 4. Find the volume of a box which is 4 cm by 5 cm by 3 cm.
SHOW YOUR WORK

*Formula:*________________ *Area:*________________

PROBLEMS:

Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 5. Find the volume of a cylinder which has a diameter of 14 centimeters, and a height of 15 centimeters. *Use 22/7 for* π .

____

____

(2) 6. How many cubic meters of concrete are required for a driveway which is 12 m long, 3 m wide and .15 m thick?

____

____

PROGRESS CHECK B

UNIT: 8

TOPIC D: VOLUME CRITERIA 9/10

DO ALL WORK IN YOUR EXERCISE BOOK:

(1) 1. Check the words below which are names of forms.

____*circle* ____*rectangular solid* ____*square* ____*sphere*

(1) 2. Volume is:____

____

(3) 3. State 3 metric units used in measuring volume:

________________ ________________ ________________

(2) 4. Find the volume of a rectangular tank which is 6 meters long, 3 meters wide and 2 meters deep. *SHOW YOUR WORK*

*Formula:*____________________ *Area:*____________________

(2) 5. Find the volume of a cylinder which is 10 cm high and has a diameter of 6 cm. *SHOW YOUR WORK* *Use 22/7 for* π .

*Formula:*____________________ *Area:*____________________

PROBLEMS:

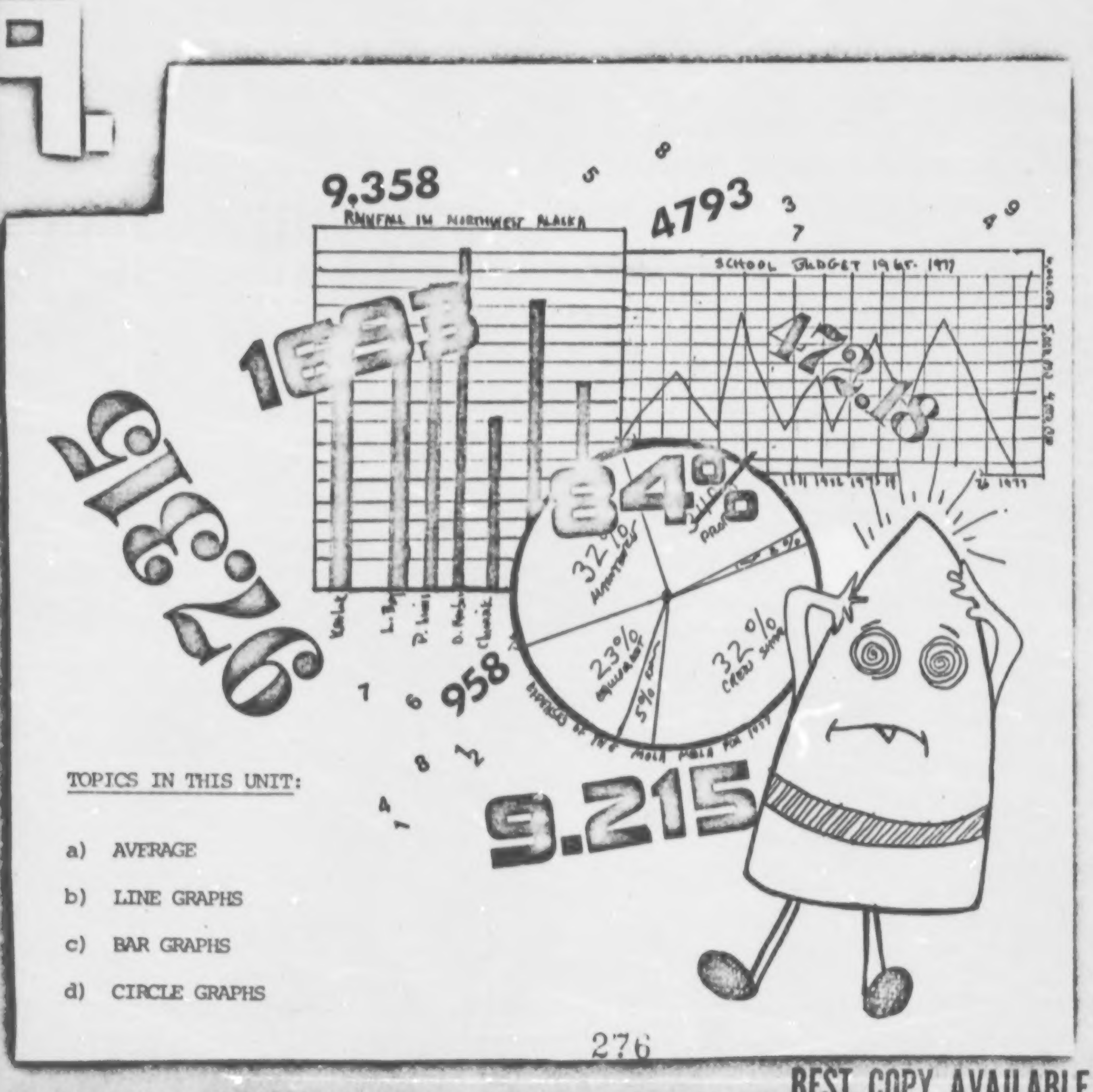
Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 6. How many meters are in a swimming pool which is 20 meters long, 10 meters wide, and 2 meters deep?

*Formula:*____

____*cu. m.*

STATISTICS


9,358
RAINFALL IN NORTHWEST ALASKA
4793
SCHOOL BUDGET 1965-1977
1977
958
9.215
32% MAINTENANCE
23% EQUIPMENT
32% CREW SHARE
5%
EXPENSES OF THE MOLA MOLA FOR 1977

TOPICS IN THIS UNIT:

a) AVERAGE

b) LINE GRAPHS

c) BAR GRAPHS

d) CIRCLE GRAPHS

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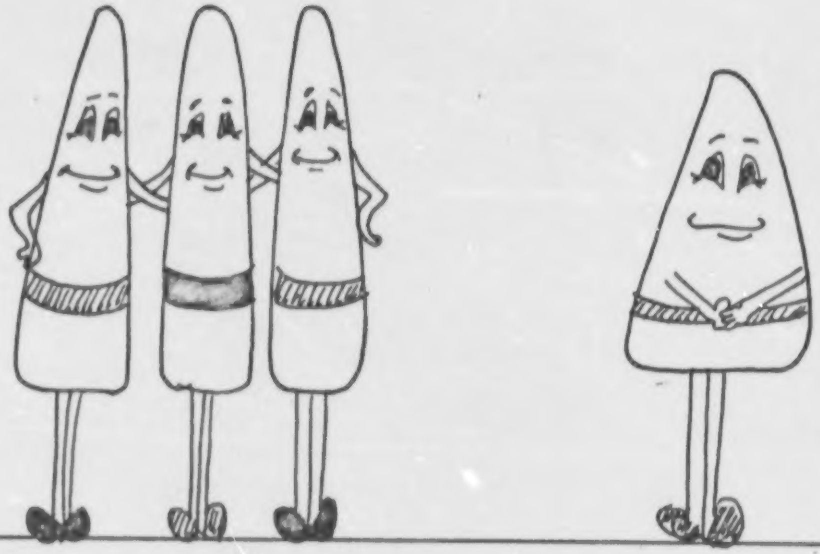
Unit 9.

STATISTICS

A. Average



OBJECTIVES:

1. Calculate the simple average for a given group of numbers.
2. Use calculations of average in solving word problems.

UNIT: 9

TOPIC A: AVERAGE

Chk:	Obj:	Source:	Work to do:
	1,2	Math, A Basic Course	READ: page 20 DO: page 21

RAPID REVIEW:

1. Find the average of the following numbers:

   45, 96, 34, 49, 56, 74

2. On Sunday four planes landed at the airport. The first plane had 154 passengers, the second had 97 passengers, the third had 165 passengers and the fourth had 144 passengers. What is the average number of passengers for the four planes?

3. Opening day of salmon season Ted's father made six sets and caught the following numbers of salmon; 856, 1042, 243, 521, 104, and 978. What was the average number of fish caught per set?

READY? DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 9

TOPIC A: AVERAGE

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2	Refresher Math	READ: page 526, 527
	1,2	Learning to Compute	DO: page 29

progress check A

UNIT: 9

TOPIC A: AVERAGE CRITERIA 5/6

DO ALL WORK IN YOUR EXERCISE BOOK.

(8) 1. Find the average of these numbers:

221, 13, 755, 47, 109, 315, 213, 415

(1) 2. The following marks were achieved on a test. What is the average mark?

123, 101, 85, 172, 121, 49, 189

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 3. A car travelled 301 kilometres in 7 hours. What was the car's average speed?

(2) 4. If your monthly earnings for 6 months were \$575.15, \$613.10, \$597.25, \$550.00, \$648.30 and \$616.20, calculate your average monthly earnings.

PROGRESS CHECK B

UNIT: 9

TOPIC A: AVERAGE CRITERIA 5/6

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. The following marks were achieved on a test. What is the average mark?

15, 73, 84, 31, 27

(1) 2. Find the average of these numbers:

$5,200, $4,800, $6,500, $8,700

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

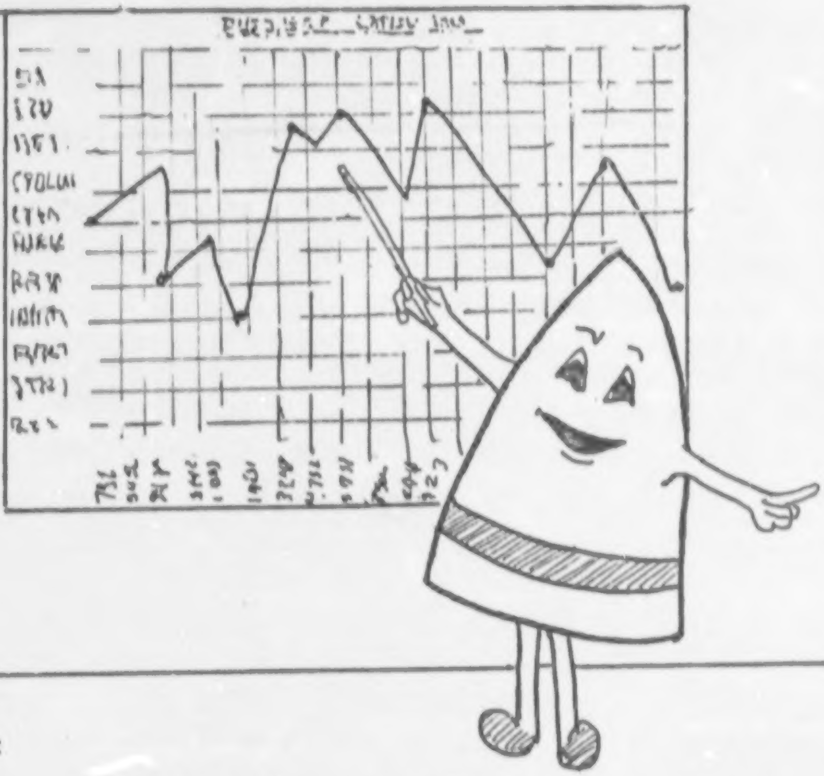
(2) 3. If your weekly earnings for a month were $115.10, $98.50, $165.40, and $136.00, calculate your average weekly earnings to the nearest dollar.

(2) 4. A plane travelled 2570 kilometres in 5 hours. What was the plane's average speed?

Unit 9.

STATISTICS

B. Line Graphs



OBJECTIVES:

1. Identify a line graph by name.
2. Read specified information from a given line graph.
3. Construct a line graph from given information

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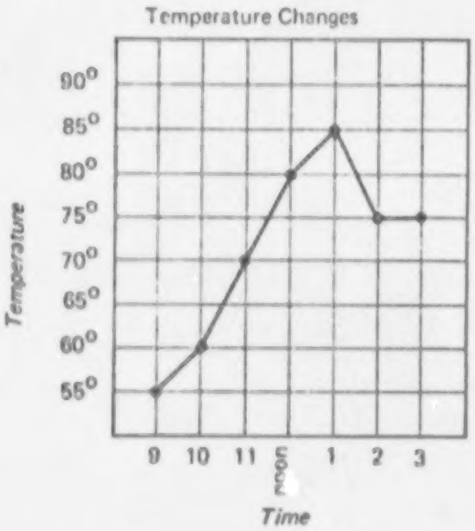
UNIT: 9

TOPIC B: LINE GRAPHS

Chk:	Obj:	Source:	Work to do:
	1,2,3	Math, A Basic Course	READ: page 245-247 DO: page 247-249

RAPID REVIEW:

1. Use the line graph to help you answer the following questions.



a) What was the temperature at 11 a.m.?_____ At noon?_____ At 1 p.m.?______

b) What was the lowest temperature recorded? _____At what time was this? ______

c) What was the highest temperature recorded? ______ At what time was this? ________

d) Did the temperature increase or decrease between 10 and 11? ____Between 11 and noon? _____ Between 1 and 2? _______

READY? DO PROGRESS CHECK A
NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 9

TOPIC B: LINE GRAPHS

Chk:	Obj:	Source:	Work to do:
	1,2,3	Refresher Math	READ & DO: page 524

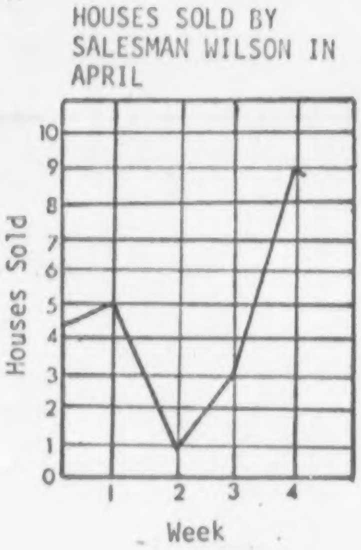
PROGRESS CHECK A

UNIT: 9

TOPIC B: LINE GRAPHS CRITERIA 12/13

DO ALL WORK IN YOUR EXERCISE BOOK.

(8) 1. Given the graph:



(1) a. What kind of graph is it?

____

(1) b. What is the title of the graph? ______________

(2) c. What two main things are being related?

____

____

(1) d. Which week had the biggest sales increase?

____

(1) e. Which week did sales drop?

____

(1) f. How many sales were there in in Week 2?

____

(1) g. How much did sales increase in Week 3?

____

UNIT: 9

TOPIC B: LINE GRAPHS

(5) 2. Draw a line graph of the following data.
Class enrollments for first three months of 1975:

Jan.	125 students
Feb.	150 students
Mar.	100 students

(2 marks for drawing the two scales, and one mark for plotting each point.)

PROGRESS CHECK B

UNIT: 9

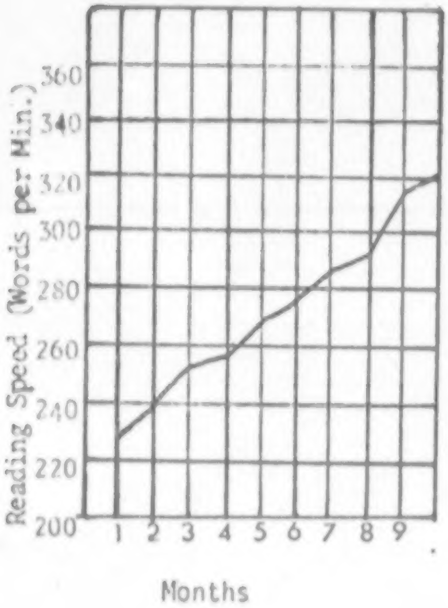
TOPIC B: LINE GRAPHS CRITERIA 15/17

DO ALL WORK IN YOUR EXERCISE BOOK.

(8 marks)

1. Given the graph:

READING SPEED RECORD
J.H. Wilson



(1) a. What kind of graph is this?

____

(1) b. What is the title of the graph?

____

(2) c. What two main things are related?

____

(1) d. What was Mr. Wilson's reading speed when he started?

____

(1) e. What was his reading speed when he finished?

____

(1) f. How much did he gain during the course?

____

(1) g. Which month did he gain the most?

____

(9 Marks)

2. Draw a line graph of the following data:

Temperatures at noon during a week in July, 1975

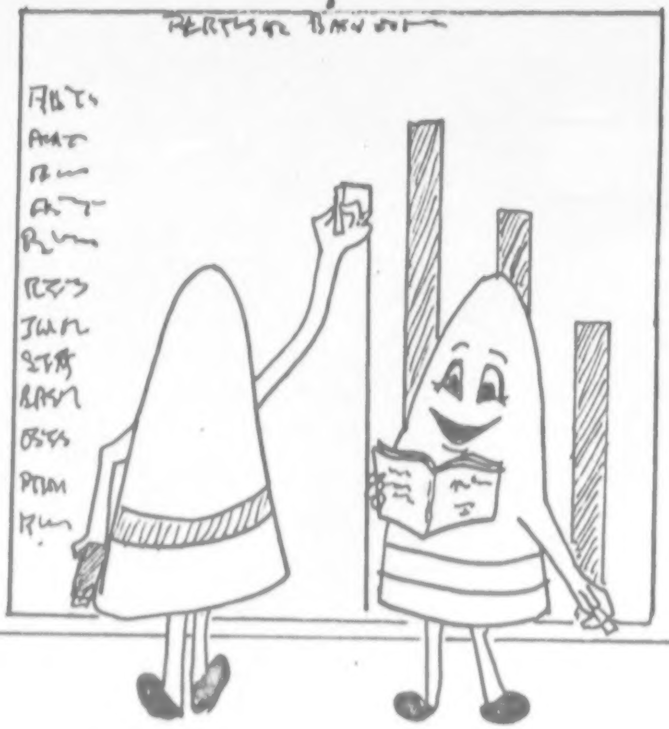
Sunday, 20°; Monday, 25°; Tuesday, 28°; Wednesday, 26°; Thursday, 27°; Friday, 19°; Saturday, 17°.

(2 marks for drawing the two scales, and 1 mark for plotting each point.)

Unit 9.

STATISTICS

C. Bar Graphs



OBJECTIVES:

1. Identify a bar graph.
2. Read specified information from a given bar graph.
3. Construct a bar graph from given information.

UNIT: 9

TOPIC C: BAR GRAPHS

Chk:	Obj:	Source:	Work to do:
	1,2,3	Math, A Basic Course	READ & DO: page 241-244

RAPID REVIEW:

1. Use the bar graph to help you complete the following:

a. On which test did Tom receive the highest score?________

The lowest score? ________

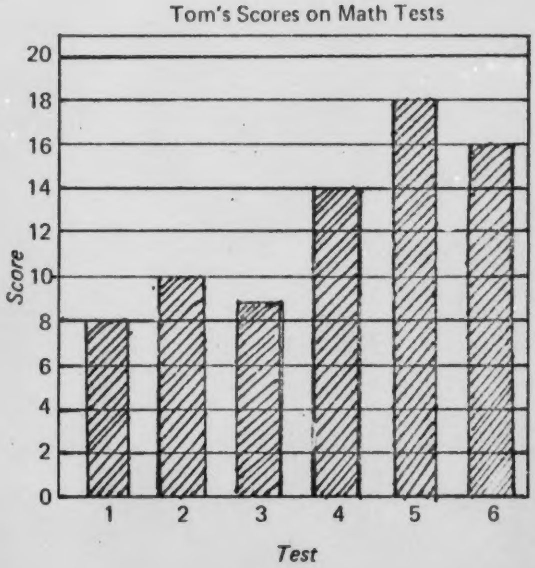
b. What were Tom's test scores on these tests: Test 1?_______

Test 3? _____Test 5?________

c. On which three tests did Tom improve his score over the preceeding test? ___________

d. On which two tests did Tom not improve his score over the preceeding test? ___________

e. On which test did Tom receive twice the score he received on test 1? ___________________


Tom's Scores on Math Tests

READY? DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS
FROM THE SOURCES ON THE
NEXT PAGE

UNIT: 9

TOPIC C: BAR GRAPHS

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2,3	Refresher Math	READ & DO: page 523
	2	Learning to Compute	DO: page 99

PROGRESS CHECK A

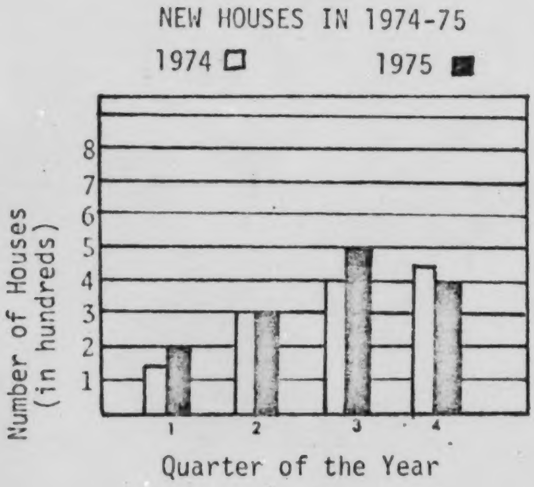
UNIT: 9

TOPIC C: BAR GRAPHS CRITERIA 14/15

DO ALL WORK IN YOUR EXERCISE BOOK.

(7 Marks)

1. Given this graph:



(1) a. What kind of graph is this? ______________

(2) b. What are the two main things being related?

____

____

(1) c. Which quarter of the year had the most new houses in 1974? ______________

(1) d. How many more new houses were constructed in the 1st quarter of 1975 than in the same quarter of 1974?

(1) e. How many new houses were constructed in all of 1975?

____

(1) f. Which quarter had about the same number of houses constructed in both years?

____

(8 Marks)

2. Construct a bar graph to show this data. XY Company's sales in July, August and September of 1974 and 1975 if the sales were:

Month	1974	1975
July	40	35
August	60	65
September	30	40

(2 Marks for drawing the scales and one mark for drawing each bar.)

progress check B

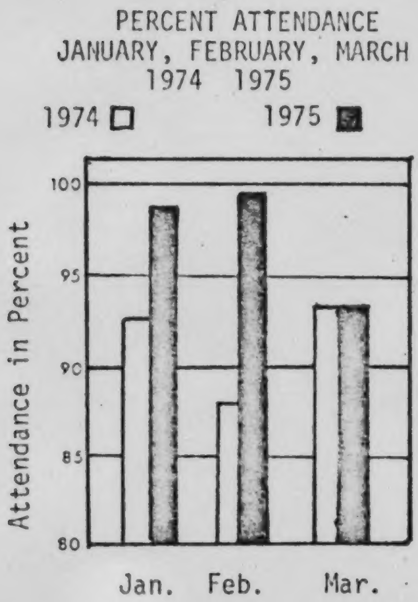
UNIT: 9

TOPIC C: BAR GRAPHS CRITERIA 13/15

DO ALL WORK IN YOUR EXERCISE BOOK.

(7 Marks)

1. Given this graph:



(1) a. What kind of graph is this?

____

(2) b. What are the two main things being related?

____

____

(1) c. Which month and year had the best attendance?

____

(1) d. Which month was the attendance the same in both years?

____

(1) e. Would you say that the attendance was better in 1974 than in 1975? ________________

(1) f. In which month of which year do you think there was a lot of sickness?

____

(8 Marks)

2. Construct a bar graph to show this data. Cost of heating a house for December, January and February of 1974 and 1975.

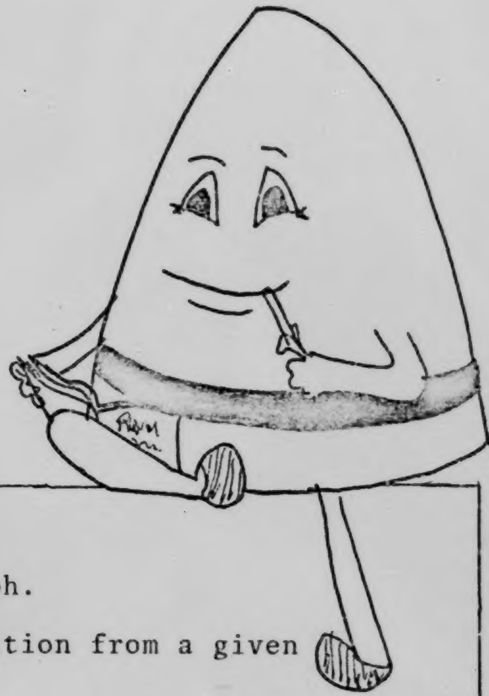
Month	1974	1975
December	\$23	\$18
January	\$32	\$42
February	\$28	\$36

(2 marks for drawing the scales and one mark for drawing each bar.)

Unit 9.

STATISTICS

D. Circle Graphs



OBJECTIVES:

1. Identify a circle graph.
2. Read specified information from a given circle graph.
3. Construct a circle graph from given information.

UNIT: 9

TOPIC D: CIRCLE GRAPHS

Chk:	Obj:	Source:	Work to do:
	1,2,3	Math, A Basic Course	READ: page 249 & 250 DO: page 251

RAPID REVIEW:

1. Assume Mr. Adams' net income is $9000.

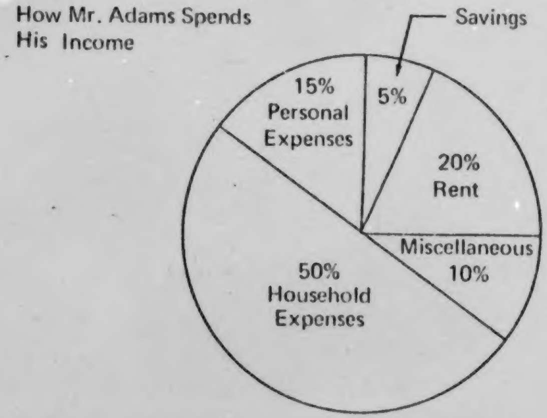
He would spend $_______for rent.

He would spend $_______for household expenses.

He would spend &_______for personal expenses.

He would save $_______.

He would spend $_______for miscellaneous expenses.



READY? DO PROGRESS CHECK A
NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 9

TOPIC D: CIRCLE GRAPHS

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2,3	Refresher Math	READ & DO: page 525

295

progress check A

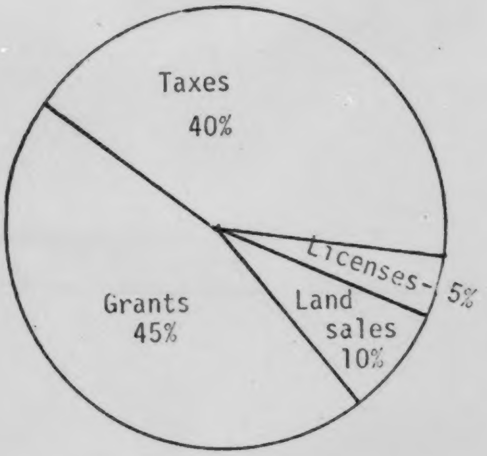
UNIT: 9

TOPIC D: CIRCLE GRAPHS CRITERIA 10/11

DO ALL WORK IN YOUR EXERCISE BOOK.

(4 Marks)

1. Given this graph:



a. What kind of graph is this?

b. What is the biggest source of income for the city?

c. The value of government grants is equal to the total of

and

d. If the city's revenue is \$2,000,000, what amount comes from government grants?

(7 Marks)

2. Construct a circle graph of the following data.

FAMILY EXPENSES

Food, 25%
Rent, 25%
Transportation, 10%
Insurance & Medical, 5%
Payments on Debts, 20%
Savings, 10%
Miscellaneous, 3%

(1 mark for each section correctly located in the circle graph.)

PROGRESS CHECK B

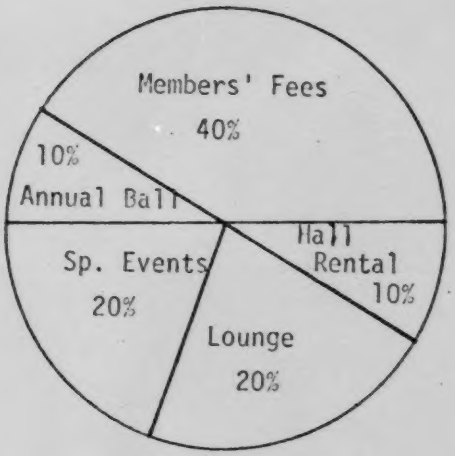
UNIT: 9

TOPIC D: CIRCLE GRAPHS CRITERIA 7/8

DO ALL WORK IN YOUR EXERCISE BOOK.

(4 Marks)

1. Given this graph:



a. What kind of graph is this?

____

b. What is the biggest source of income for the club?

____

c. If the club needs a total of $12,000 for the year, how much must it earn through special events?

____

d. What two sources of income together are equal to the amount of special events?

____

(4 Marks)

2. Construct a circle graph showing the following data:

TIME SPENT ON SUBJECTS

Mathematics, 40%
Reading, 20%
Language, 25%
Other subjects, 15%

(1 mark for each section correctly located in the circle graph.)

10.

GEOMETRY

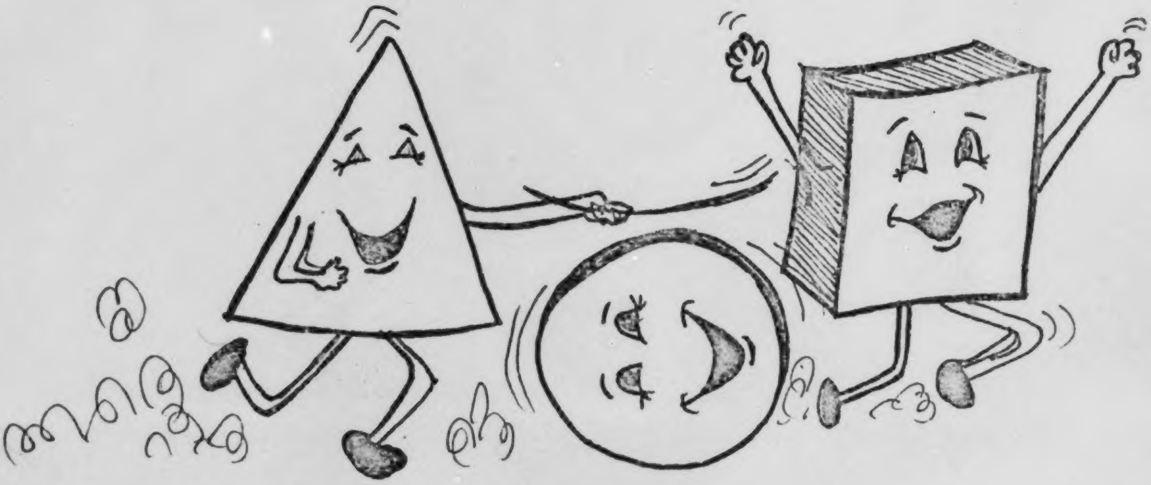
TOPICS IN THIS UNIT:

a) LINES

b) ANGLES

c) POWERS & ROOTS/TRIANGLES

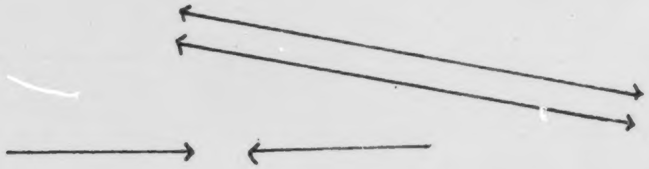
d) SCALE



Unit 10.

GEOMETRY

A. Lines



OBJECTIVES:

THE STUDENT MUST BE ABLE TO:

1. Identify straight lines, horizontal lines, vertical lines, parallel lines and oblique lines from a series of diagrams.
2. Draw a line segment of given length.
3. Label a line segment, *(A ________ B)*
4. Bisect a given line using a straight edge and compass.
5. Construct a perpendicular to a given line segment at a given point using a straight edge and compass.

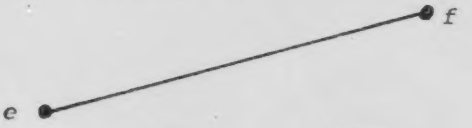
UNIT: 10

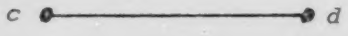
TOPIC A: LINES

Chk:	Obj:	Source:	Work to do:
	1,2,3, 4,5	Math, A Basic Course	READ & DO: page 319-322

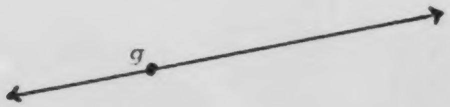
RAPID REVIEW:

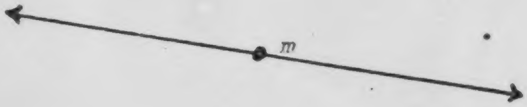
1. Use a compass and a straight edge to bisect each line segment.





2. Use a compass and a straight edge to construct a line perpendicular to each line at the point given.





READY? DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 10

TOPIC A: LINES

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2,3	Refresher Math	READ & DO: page 305-307
	2	Refresher Math	DO: page 309
	4,5	Refresher Math	READ & DO: page 346-348

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PROGRESS CHECK A

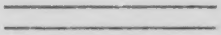
UNIT: 10

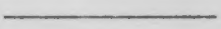
TOPIC A: LINES CRITERIA 7/7

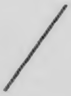
DO ALL WORK IN YOUR EXERCISE BOOK.

(4) 1. Match the figures with the names:

a. ____________ oblique line

b.  ____________ horizontal line

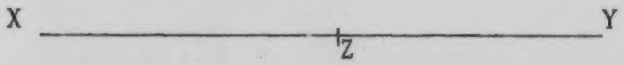
c.  ____________ vertical line

d.  ____________ parallel lines

(1) 2. Draw a line segment 57 millimetres long and label it AB.

(1) 3. Bisect this line segment (use a straight edge and compass; show all your construction lines).

(1) 4. Draw a perpendicular to the line XY below at the point Z. (Use a compass and straight edge; show all construction lines.)



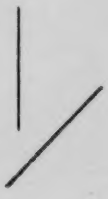
PROGRESS CHECK B

UNIT; 10

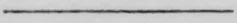
TOPIC A: LINES CRITERIA 7/7

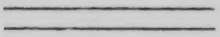
DO ALL WORK IN YOUR EXERCISE BOOK.

(4) 1. Match the figures with the names.

a.  ________ oblique line

b. ________ parallel lines

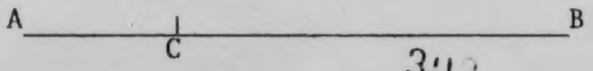
c.  ________ horizontal line

d.  ________ vertical line

(1) 2. Draw a line segment XY, 8 centimetres long and label it AB.

(1) 3. Besect the line below (use straight edge and compass and show all construction lines).

(1) 4. Draw a perpendicular to the line AB below at the point C. (Use straight edge and compass and show all construction lines.)



Unit 10.

GEOMETRY

B. Angles

OBJECTIVES:

THE STUDENT MUST BE ABLE TO:

1. Identify an angle in a series of diagrams.
2. Identify a degree as a measure of angles and as being 1/360 of a circle.
3. Label angles and identify angles by letter name.
4. Measure given angles in degrees using a protractor.
5. Draw angles of given size using a protractor and straight edge.
6. Label acute, right, obtuse, reflex and straight angles.
7. Define supplementary and complementary angles.
8. Identify interior, exterior, alternate and corresponding angles in a diagram of parallel lines cut by a transversal.

LEARNING ACTIVITIES

UNIT: 10

TOPIC B: ANGLES

Learning Activities:

If you missed any of objectives 1, 2, 3, 6 or 7 on the Diagnosis, get a copy of Mathematics, A Basic Course and read pages 323 to 325. Do exercises 1 to 6 on page 325, exercises 7, 13 a-f on page 326, and exercise 19 a-d on page 327. Check your answers with those in the separate answer key.

If you missed either objective 4 or 5 on the Diagnosis, read about "measuring and constructing angles with a protractor"on pages 327 to 329. Then do exercise 1 on page 329 and exercises 2 and 3 a-f on page 330. Have another student or your instructor check your work.

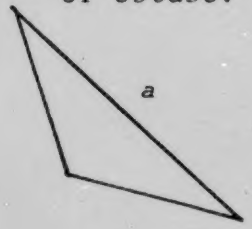
UNIT; 10

TOPIC B: ANGLES

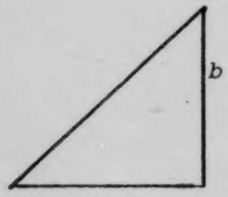
Chk:	Obj:	Source:	Work to do:
	1,2,3, 6,7	Math, A Basic Course	READ & DO: page 323-327
	4,5	Math, A Basic Course	READ & DO: page 327-330

RAPID REVIEW:

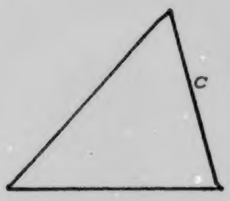
1. Label each of the following triangles as acute, right or obtuse.



__________triangle

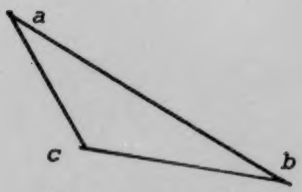


__________triangle

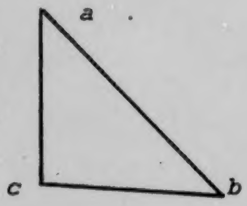


__________triangle

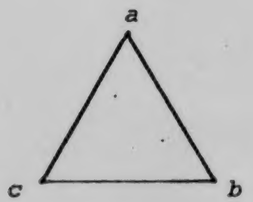
2. Find the measure of angle C in degrees of each of the following triangles.



a. __________



b. __________



c. __________

READY? DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 10

TOPIC B: ANGLES

EXTRA PRACTICE:

Chk:	Obj:	Sources:	Work to do:
	1,3,6	Refresher Math	READ & DO: page 338-339
	2,4,5	Refresher Math	READ & DO: page 340-341

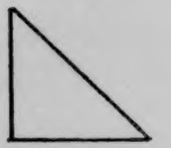
PROGRESS CHECK A

UNIT: 10

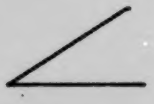
TOPIC B: ANGLES CRITERIA 15/16

DO ALL WORK IN YOUR EXERCISE BOOK.

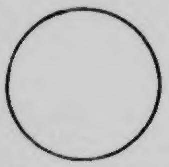
(1) 1. Check the figure below which is an angle.



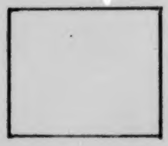
a________



b________



c________

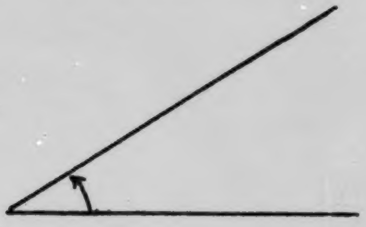


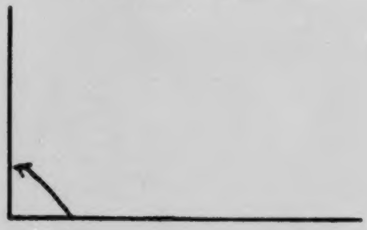
d________

(2) 2. Angles are measured in ____________. Each of these units is ______________ of a circle or of a complete turn about a point.

(1) 3. Draw an angle ABC which is 65°.

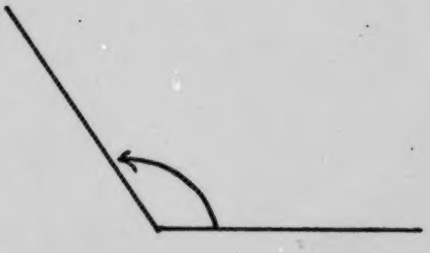
(10) 4. Measure these angles and label them as being acute, right, obtuse, reflex or straight angles.

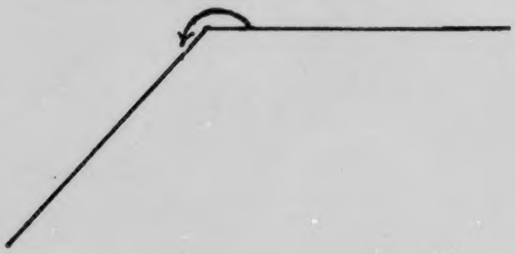




Size ____________ Size ____________

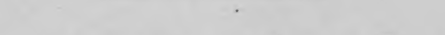
Kind ____________ Kind ____________

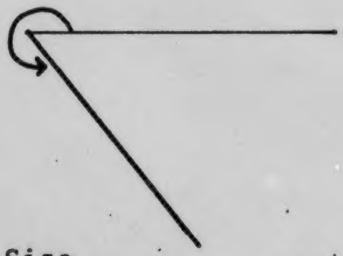




Size ____________ Size ____________

Kind ____________ Kind ____________



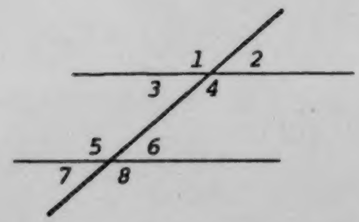


Size ____________ Size ____________

Kind ____________ Kind ____________

(1) 5. If $\angle A + \angle B = 90^\circ$, then $\angle A$ and $\angle B$ are __________ angles.

(1) 6.



In this diagram the interior angles are ____________________.

PROGRESS CHECK B

UNIT: 10

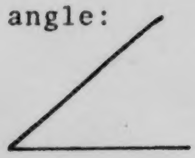
TOPIC B: ANGLES CRITERIA 12/13

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. Draw an example of an angle.

(2) 2. Degrees are the units to measure ________. One degree is ____________ of a full turn around a point.

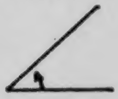
(1) 3. Measure this angle:



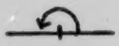
____________$^{\circ}$

(5) 4. What kind of angles are these?

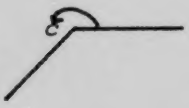
a



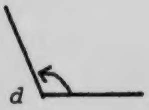
b



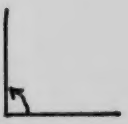
c



d



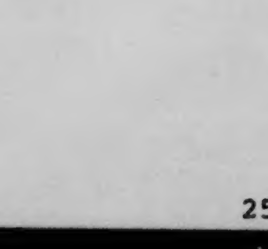
e



(1) 5. Draw an angle ABC of 130°.

(1) 6. If $\angle A + \angle B = 180^{\circ}$, then $\angle A$ and $\angle B$ are ________ angles.

(2) 7.



In this diagram,

a. $\angle 4$ is alternate to $\angle$ ________

b. $\angle 4$ corresponds to $\angle$ ________

Unit 10.

GEOMETRY

C. Powers and Roots/Triangles

OBJECTIVES:

THE STUDENT MUST BE ABLE TO: (1st Set)

1. Define squaring a number by using an example such as 3 squared means 3 X 3 and square given numbers.
2. Use exponential notation for writing squares. *(i.e., $A^2 = A \times A$)*
3. Use tables of powers to square given numbers.
4. Define square root by using an example such as the square root of 9 means 3 because 3 X 3 = 9 and write square roots of perfect squares to 144.
5. Use tables of roots to determine the square roots of perfect squares to 144.
6. Use tables of roots to determine the square root of given numbers.

UNIT: 10

TOPIC C: POWERS AND ROOTS/TRIANGLES

Do the work liste for each objective and check off each step as you complete it.

OBJECTIVES:

THE STUDENT MUST BE ABLE TO: (2nd Set)

1. Identify scalene, right, equilateral and isosceles triangles from diagrams and descriptions.
2. Label triangles and identify triangles by letter name.
3. Draw triangles with protractor, ruler and compass given the measure of:
   - A. 3 sides
   - B. 2 sides and the included angle
   - C. 2 angles and an included side
4. Define congruent figures as figures which are the same shape and size.
5. Define similar figures as figures which have the same shape but are different in size.
6. Identify congruent and similar triangles from diagrams on which lengths of sides are shown.
7. Label right angle and hypotenuse in a given right triangle.
8. Apply the pythagorean theorem to find an unknown side of a right triangle.

UNIT: 10

TOPIC C: POWERS AND ROOTS/TRIANGLES

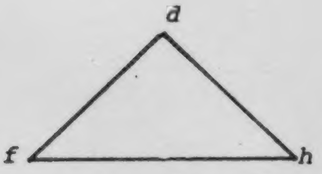
Chk:	Obj:	Source:	Work to do:
	1,2,3, 4,5,6	Math, A Basic Course	READ & DO: page 351-354
2nd Set			
	1,2	Math, A Basic Course	READ & DO: page 336-338
	3	Math, A Basic Course	READ & DO: page 338-340
	4,5,6	Math, A Basic Course	READ & DO: page 385-387 and 393-395
	7,8	Math, A Basic Course	READ & DO: page 349-355

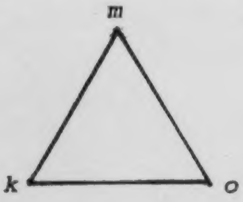
RAPID REVIEW:

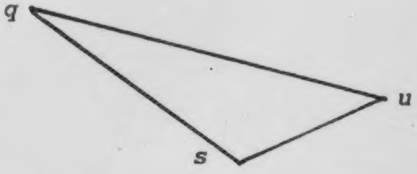
1. Solve the following:

a. $3^2 =$ _____ b. $5^2 =$ _____ c. $8^2 =$ _______

2. Label the following triangles as scalene, isosceles or equilateral.







a _______________triangle b _______________triangle c ____________triangle

READY? DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 10

TOPIC C: POWERS AND ROOTS/TRIANGLES

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2,3, 4,5,6	Refresher Math	READ & DO: page 256-261
2nd Set			
	1	Refresher Math	READ & DO: page 313-314
	2,7,8	Refresher Math	READ & DO: page 321-323
	2,4,5, 6	Refresher Math	READ & DO: page 324-325
	3	Refresher Math	READ & DO: page 344-345

progress check A

UNIT: 10

TOPIC C: POWERS AND ROOTS/TRIANGLES CRITERIA 12/13

DO ALL WORK IN YOUR EXERCISE BOOK.

(4) 1. What kind of triangles are these?

a. *has 2 sided equal* c. *has no sides equal*

b. *has 3 sided equal* d. *has a right angle*

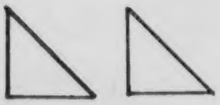
(1) 2. Using protractor, ruler and compass draw a triangle *ABC* in that $AB = 2.5$ *cm*, $\angle ABC = 30^\circ$ and $BC = 3.7$ *cm*.

(2) 3. Congruent figures are figures which are the same ____________ and ____________.

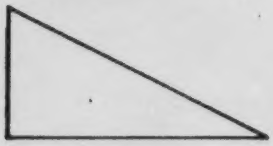
(1) 4. Similar figures are figures which are the ____________.

(1) 5. Are these two triangles congruent?

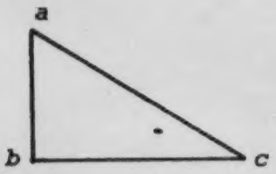
____



(2) 6. In the right triangle below put an "X" in the angle which is the right angle and put an "h" on the hypotenuse.



(2) 7. Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.



If AB = 3 and BC = 4, calculate the length of AC.

____

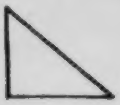
PROGRESS CHECK B

UNIT: 10

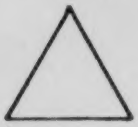
TOPIC C: POWERS AND ROOTS/TRIANGLES CRITERIA 9/10

DO ALL WORK IN YOUR EXERCISE BOOK.

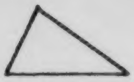
(4) 1. What kind of triangles are these?



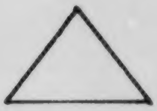
a. ______



b. ______



c. ______



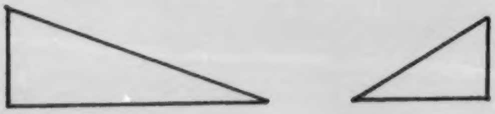
d. ______

(1) 2. Using a ruler, protractor and compass, draw a triangle *DEF* so that *DE = 25 mm, EF = 38 mm and DF = 2.6 cm.*

(1) 3. Figures with the same shape and size are ______ figures.

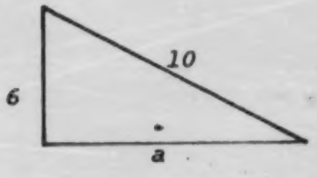
(1) 4. Figures with the same shape but of different size are ______ figures.

(1) 5. Are these figures congruent or are they similar?



______

(2) 6. Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.



In the right angle triangle, calculate the length of side a.

______

Unit 10.

GEOMETRY

D. Scale

OBJECTIVES:

THE STUDENT MUST BE ABLE TO:

1. Identify a scale drawing as being similar to the actual article or figure.
2. Identify examples of scale drawings in common use.
3. Calculate actual lengths given a scale drawing and the scale.
4. Make a scale drawing of a given simple plane figure to a given scale.

UNIT: 10

TOPIC D: SCALE

Chk:	Obj:	Source:	Work to do:
	1,2,3, 4	Math, Basic Course	READ & DO: page 154-158

RAPID REVIEW:

1. Name at least one example of scale drawings in common use in a school.

2. Describe what scale drawings are used for.

READY? DO PROGRESS CHECK A

NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE

UNIT: 10

TOPIC D: SCALE

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2,3	Refresher Math	READ & DO: page 310-311

PROGRESS CHECK A

UNIT: 10

TOPIC D: SCALE CRITERIA 8/9

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. A scale drawing of a figure is ____________ to the actual figure.

(2) 2. Give two examples of scale drawings in common use.

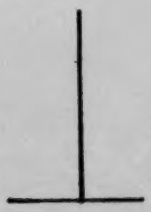
a. ____

b. ____

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 3. This is a scale drawing of a flag pole which is drawn to a scale of 1.6 cm = 1 metre.

How high is the actual flag pole? ________________



(2) 4. On a map two towers are 1 1/2 centimetres apart. If the map is drawn to a scale of 1 centimetre = 12 kilometres, how far apart are these towers.

____

(2) 5. A garage door is 4 metres high and 5 metres wide. It is rectangular in shape. Make a scale drawing of the door to a scale of 1 centimetre = 1 metre.

PROGRESS CHECK B

UNIT: 10

TOPIC D: SCALE CRITERIA 8/9

DO ALL WORK IN YOUR EXERCISE BOOK.

(1) 1. A scale drawing of an object is ____________ to the object.

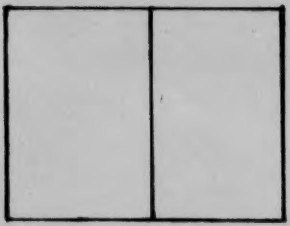
(2) 2. Give two examples of scale drawings we use.

a. ______________________________

b. ______________________________

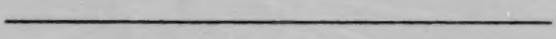
Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 3. This is a scale drawing of a window. How high is the actual window if this drawing is to a scale of 2 cm = 1 m.



____

(2) 4. This line is a scale drawing of a chain to 1 cm = 10 cm. How long is the actual chain?

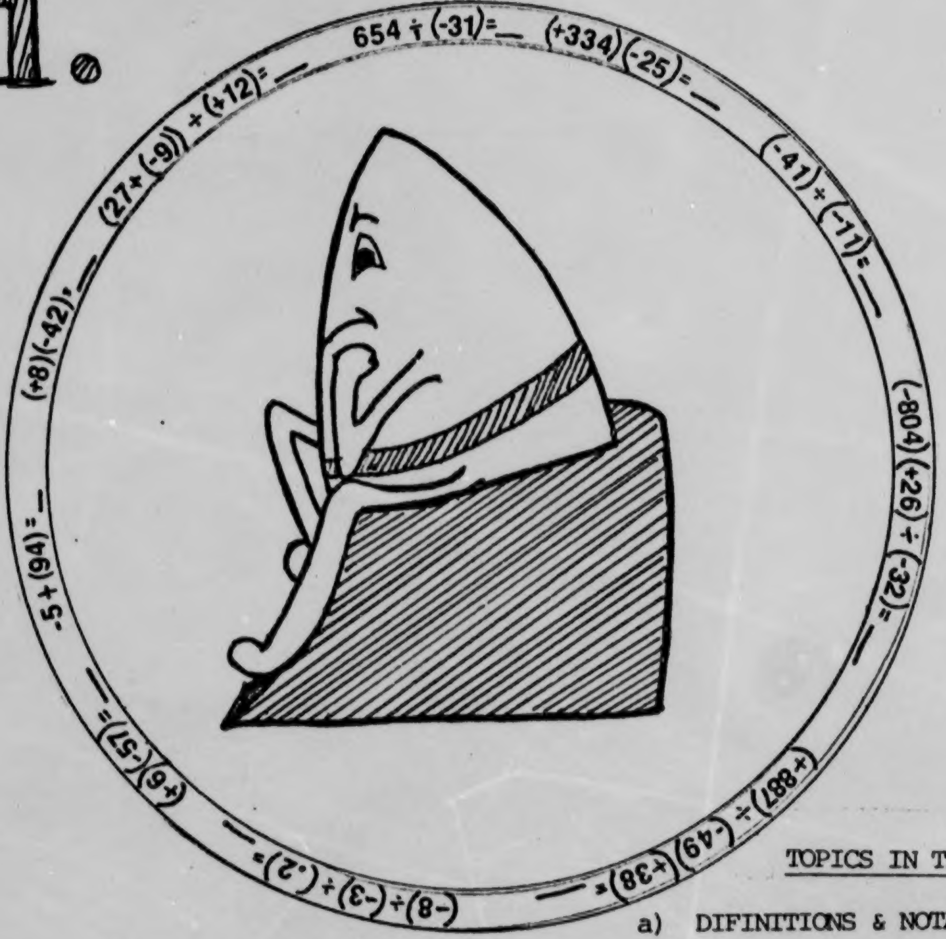


____________ cm

(2) 5. Make a scale drawing of a rectangular table top to a scale of 3.5 cm = 1 m, if the table is 3 m long and 2 m wide.

INTEGERS & RATIONALS

11.


654 ÷ (-31) = __
(+334)(-25) = __
(-41) + (-71) = __
(-804)(+26) ÷ (-32) = __
(+887) ÷ (-49)(+38) = __
(-8) ÷ (-3) ÷ (.2) = __
(+6)(-57) = __
-5 + (94) = __
(+8)(-42) = __
(27 + (-9)) + (+12) = __

TOPICS IN THIS UNIT:

a) DIFINITIONS & NOTATION

b) ADDITION & SUBTRACTION

c) MULTIPLICATION & DIVISION

d) FACTORING

Unit 11.

INTEGER and RATIONALS

A. Definitions and Notation

OBJECTIVES:

1. Define whole numbers, positive integers, negative integers, integers and rational numbers (numbers which can be expressed as fractions).
2. Read and write positive and negative integers and rational numbers correctly.
3. Define the opposite of a number by writing the opposite of a given number using correct + or - signs.
4. Arrange a set of positive and negative numbers from smallest to largest.

UNIT: 11

TOPIC A: DEFINITIONS AND NOTATION

Chk	Obj:	Source:	Work to do:
	1,2, 3,4	Math, A Basic Course	READ: page 299 DO: page 300-301
	1,2, 3,4	Refresher Math	READ: page 477-478 DO: "practice problems page 478, 1-6

RAPID REVIEW:

REMEMBER

1. Integers are the set of whole numbers and their opposites.
2. Rational numbers are the set of fractional numbers and their opposites.
3. The + sign indicates the direction of a gain, an income, or a distance upward.
4. The - sign indicates the direction of a loss, an expense, or a distance downward.
5. The absolute value of a number is its numerical value or the number of units it contains regardless of its sign.

1. Circle the integers:

2 1/2 -5 -7.3 6 3

2. Circle the rational numbers:

47 -8 -15 1/4 1/2 -13

UNIT: 11

TOPIC A: DEFINITIONS AND NOTATION

RAPID REVIEW: (continued

3. What is the opposite of 74?

____

4. What is the absolute value of -10.2?

____

READY? OK, DO PROGRESS CHECK A

NOT READY? OK, DO SOME PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

UNIT: 11

TOPIC A: DEFINITIONS AND NOTATION

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2, 3,4	Refresher Math	READ: page 476-477 DO: "practice problems" 1-8

PROGRESS CHECK A

UNIT: 11

TOPIC A: DEFINITIONS AND NOTATION — CRITERIA 10/10

DO ALL WORK IN YOUR EXERCISE BOOK.

(4) 1.

a. Circle the whole numbers in the following list:

7.9   8   4 2/3   3   7/9

b. Circle the positive integers in the following list:

15   1/4   3   -9   -6 2/3

c. Circle the negative integers in the following list:

-2.3   7   -3   2/7   -89

d. Circle the positive and negative rational numbers in the following list:

5/8   -4   -7 1/2   9.8   -5/9

(2) 2. Write these numbers in words.

a. -2 ______________________________

b. +1 1/2 ____________________________

(2) 3. Write these numbers using symbols.

a. positive four ______________________

b. negative three and one-half _________

(1) 4. What is the opposite of +3? ___________

(1) 5. Arrange these in order from smallest to largest.

0,   -5,   2 1/2,   -3/4,   -1/2

____, ____, _____, ____, ____

PROGRESS CHECK B

UNIT: 11

TOPIC A: DEFINITIONS AND NOTATION CRITERIA 9/10

DO ALL WORK IN YOUR EXERCISE BOOK.

(4) 1. a. Circle the whole numbers in the following list:

5/7 3 6 7.8 2 1/4

b. Circle the positive integers in the following list:

2.3 1/2 8 3 1/3 7

c. Circle the negative integers in the following list:

-5/8 -5 -8 2.6 -2.6

d. Circle the positive and negative rational numbers in the following list:

2/5 -3/4 -7 -2.9 9 3/8

(2) 2. Write these numbers in words:

a. +5 ______________________

b. -3/4 ______________________

(2) 3. Write these numbers using symbols:

a. *negative seven* ______________________

b. *positive thirteen* ______________________

(1) 4. What is the opposite of -5? ______________________

(1) 5. Arrange these in order from smallest to largest:

-3/4, 0, 5, -7, -1/3

_____, _____, _____, _____, _____

Unit 11.

INTEGERS and RATIONALS

B. Addition and Subtraction

OBJECTIVES:

1. Calculate sums of positive and negative integers.
2. Calculate sums of positive and negative rational numbers.
3. Calculate differences of positive and negative integers.
4. Calculate differences of positive and negative rational numbers.
5. Use addition and subtraction of integers and rational numbers in solving word problems.

UNIT: 11

TOPIC B: ADDITION AND SUBTRACTION

Chk:	Obj:	Source:	Work to do:
	1,2,5	Math, A Basic Course	READ: page 301-304 DO: page 304-305, 1-4
	3,4,5	Math, A Basic Course	READ: page 306-307 DO: page 307, 1-20 and word problems page 307-308, 1 and 2

RAPID REVIEW:

REMEMBER

1. When adding signed numbers having like signs, add their absolute values and place the common sign before their sum.
2. When adding two signed numbers having unlike signs, subtract the smaller absolute value from the larger and place in front of the difference the sign of the larger absolute value.
3. To subtract signed numbers, change the sign of the subtrahend (the second number) and add.

Compute the following:

1) $-3 + (-5) =$ ________ 2) $-16 - (-24) =$ ________

3) $2 - (+4) =$ ________ 4) $-11 + (-7) =$ ________

READY? OK, DO PROGRESS CHECK A.
NOT READY? DO SOME PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

UNIT: 11

TOPIC B: ADDITION AND SUBTRACTION

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2	Refresher Math	PAGE 480-481 DO: "practice problems" 2-5
	3,4	Refresher Math	PAGE 482-483 DO: "practice problems" 2-5

PROGRESS CHECK A

UNIT: 11

TOPIC B: ADDITION AND SUBTRACTION CRITERIA 23/25

DO ALL WORK IN YOUR EXERCISE BOOK.

(10) 1. Add:

a. $\begin{array}{r}+3\\ \underline{+6}\end{array}$ b. $\begin{array}{r}+17\\ \underline{-\ 2}\end{array}$ c. $\begin{array}{r}-5\\ \underline{+5}\end{array}$ d. $\begin{array}{r}-13\\ \underline{-\ 9}\end{array}$ e. $\begin{array}{r}-9\\ \underline{+6}\end{array}$

f. (+5) + (-2) = ______ i. (-6 1/2) + (2 3/4) = ______

g. (-13) + (+13) = ______ j. (+5.25) + (-19.60) = ______

h. (-5) + 0 = ______

(10) 2. Subtract:

a. $\begin{array}{r}+13\\ \underline{+15}\end{array}$ b. $\begin{array}{r}-9\\ \underline{+2}\end{array}$ c. $\begin{array}{r}42\\ \underline{-5}\end{array}$ d. $\begin{array}{r}-9\\ \underline{+9}\end{array}$ e. $\begin{array}{r}-6\\ \underline{-6}\end{array}$

f. (-8) - (+3) = ______

g. (-5) - (+8) - (+5) = ______

h. 15 - (-5) = ______

i. (-17) - (-17) = ______

j. (-5.4) - (2.1) = ______

(3) 3. Do these:

a. 5 - 3 + 7 = ______ c. 20 - 5 + 5 = ______

b. 17 - 19 - 4 = ______

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 4. If the temperature was -18° and dropped 3°, what would the temperature be?

progress check B

UNIT: 11

TOPIC B: ADDITION AND SUBTRACTION CRITERIA 22/25

DO ALL WORK IN YOUR EXERCISE BOOK.

(10) 1. Add:

a. $\begin{array}{r} +5 \\ \underline{+2} \end{array}$ b. $\begin{array}{r} -6 \\ \underline{-7} \end{array}$ c. $\begin{array}{r} +42 \\ \underline{-\ 9} \end{array}$ d. $\begin{array}{r} -19 \\ \underline{+\ 6} \end{array}$ e. $\begin{array}{r} -21 \\ \underline{+21} \end{array}$

f. +5 + (+6) - (+6) = ______

g. (-7) + (-2) + (+17) = ______

h. (-14) + (-18) = ______

i. (+3.1) + (-3.1) = ______

j. (-2 1/6) + (+8 2/3) = ______

(10) 2. Subtract:

a. $\begin{array}{r} +2\ 1/2 \\ \underline{-1\ 1/4} \end{array}$ b. $\begin{array}{r} -9.5 \\ \underline{-2.1} \end{array}$ c. $\begin{array}{r} +17 \\ \underline{+\ 5} \end{array}$ d. $\begin{array}{r} -31 \\ \underline{+\ 7} \end{array}$ e. $\begin{array}{r} 0 \\ \underline{-2} \end{array}$

f. 7 - (-3) = ______ i. (+20) - (+2 1/2)= ______

g. (-24) - (19) = ______ j. (-3.6) - (3.6)= ______

h. +16 - (+4) = ______

(3) 3. Do these:

a. 7 + 3 - 11 = ______ c. 15 - 5 + 6 = ______

b. 14 - 5 - 12 = ______

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 4. If the temperature changed from -10° to 25°, by how much did it change?

Unit 11.

INTEGERS and RATIONALS

C. Multiplication and Division

OBJECTIVES:

1. Calculate products of positive and negative integers.
2. Calculate products of positive and negative rational numbers.
3. Calculate quotients of positive and negative integers.
4. Calculate quotients of positive and negative rational numbers.
5. Use multiplication and division of integers and rational numbers in solving word problems.

UNIT: 11

TOPIC C: MULTIPLICATION & DIVISION

Chk:	Obj:	Source:	Work to do:
	1,2	Math, A Basic Course	READ: page 308-309 DO: page 309, 1-20
	3,4	Math, A Basic Course	READ: page 310 DO: page 311, 1-20
	5		Review Unit I, Topic F

RAPID REVIEW:

REMEMBER

1. When two numbers having like signs are multiplied, the product is positive.
2. When two numbers having unlike signs are multiplied, the product is negative.
3. When three numbers are to be multiplied, find the product of two numbers, and multiply this product by the third number.
4. When numbers having like signs are divided, the quotient is positive.
5. When numbers having unlike signs are divided, the quotient is negative.

Compute the following:

1) $(8)(-9)(-6) =$ ____ 2) $(2\ 1/4)(-5) =$ ____

3) $(-14)(-18) =$ ____ 4) $63 \div (-7) =$ ____

5) $\frac{-144}{-12} =$ ____ 6) $\frac{(-4)(-18)}{-9} =$ ________

READY? OK, DO PROGRESS CHECK A.
NOT READY? DO MORE PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

UNIT: 11

TOPIC C: MULTIPLICATION & DIVISION

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2	Refresher Math	Page 485 DO: "practice problems" 1 & 2
	3,4	Refresher Math	Page 486 DO: "practice problems" 1-3

336

PROGRESS CHECK A

UNIT: 11

TOPIC C: MULTIPLICATION & DIVISION CRITERIA 23/25

DO ALL WORK IN YOUR EXERCISE BOOK.

(10) 1. Multiply:

a. $\begin{array}{r} +5 \\ \underline{+2} \end{array}$ b. $\begin{array}{r} -6 \\ \underline{-3} \end{array}$ c. $\begin{array}{r} +12 \\ \underline{-\ 1} \end{array}$ d. $\begin{array}{r} -9 \\ \underline{+3} \end{array}$ e. $\begin{array}{r} -4 \\ \underline{0} \end{array}$

f. $(+7)\ (-2) =$ _____ i. $(+2.1)\ (-2.1) =$ _____

g. $(-3)\ (-3)\ (-3) =$ _____ j. $(-7)\ (-7) =$ _____

h. $(+2\ 1/2)\ (-2) =$ _____

(10) 2. Divide:

a. $(+5) \div (-1) =$ _____ d. $(-8) \div (+8) =$ _____

b. $(-16) \div (-2) =$ _____ e. $(+3.5) \div (-7) =$ _____

c. $0 \div (-17) =$ _____

f. $\frac{-8}{-4} =$ _____ g. $\frac{-18}{-3} =$ _____ h. $\frac{-30}{-10} =$ _____

i. $\frac{-4.2}{10} =$ _____ j. $\frac{24}{-48} =$ _____

(3) 3. Do these:

a. $\frac{(-5)\ (-3)}{-5} =$ _____ c. $\frac{5 \times 6}{-3} =$ _____

b. $(-7) \div (-14) =$ _____

PROBLEMS: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 4. If the temperature was $+5^{o}$ and dropped 2^{o} in each of 5 hours, what is the new temperature?

PROGRESS CHECK B

UNIT: 11

TOPIC C: MULTIPLICATION & DIVISION CRITERIA 22/25

DO ALL WORK IN YOUR EXERCISE BOOK.

(10) 1. Multiply:

a. $\begin{array}{r} -7 \\ \underline{-2} \end{array}$ b. $\begin{array}{r} -9 \\ \underline{+3} \end{array}$ c. $\begin{array}{r} +1 \\ \underline{-13} \end{array}$ d. $\begin{array}{r} -3 \\ \underline{0} \end{array}$ e. $\begin{array}{r} +5 \\ \underline{+5} \end{array}$

f. $(-6)\ (-2) =$ ______ i. $(+2.5)\ (-.5) =$ ______

g. $(-5)\ (-1)\ (-1) =$ ______ j. $(+42)\ (+1/2) =$ ______

h. $(+13)\ (-2)\ (-1) =$ ______

(10) 2. Divide:

a. $(-7) \div (-1) =$ ______ d. $(-1) \div (+3) =$ ______

b. $(-19) \div (+19) =$ ______ e. $(+12) \div (-2) =$ ______

c. $0 \div (+4) =$ ______ f. $\frac{-9}{-3} =$ ______

g. $\frac{4}{-8} =$ ______ h. $\frac{+27}{+3} =$ ______

i. $\frac{5.6}{-10} =$ ______ j. $\frac{-10}{3} =$ ______

(3) 3. Do these:

a. $\frac{(-5) \times (-2)}{-10} =$ ______

b. $(+3)\ (-6) \div 2 =$ ______

c. $\frac{(-9)\ (-8)}{(-6)\ (+12)} =$ ______

PROBLEMS: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

(2) 4. If the temperature was $+10^{\circ}$ and rose 3 degrees an hour for 2 hours, what is the new temperature?

Unit 11

INTEGERS and RATIONALS

D. Factoring

OBJECTIVES:

1. Define factoring by factoring a non-prime positive whole number.
2. Define factor by identifying the factors in an example such as $3 \times 2 = 6$, where *3* and *2* are factors of *6*.
3. Define a prime number as a number which has only itself and *1* as factors, such as the number *7* has only *1* and *7* as prime factors.
4. Factor given integers to prime factors by choosing your own factors.
5. Calculate the greatest common factor (G.C.F.) of a given pair of integers.
6. Calculate the lowest common multiple (L.C.M.) of a given pair of integers.

UNIT: 11

TOPIC D: FACTORING

Chk:	Obj:	Source:	Work to do:
	1,2,3, 4,5	Refresher Math	READ: page 67-68 DO: page 68, 1-9 READ: page 75-76 DO: page 76-77, 1-12
	6	Refresher Math	READ: page 77-78 DO: page 78-79, 1-10

RAPID REVIEW:

REMEMBER

1. A factor is one of two or more numbers which when multiplied together give a certain product.
2. A prime number is a number which has only itself and 1 as factors.
3. The greatest common factor of two or more whole numbers is the greatest whole number that will divide all the given numbers exactly.
4. The least common multiple of two or more numbers is the smallest whole number which is a multiple of all of them.

1. List the factors of 84. ______________________________
2. Circle the prime numbers: 18 23 29 33 46
3. Find the greatest common factor of 24, 32, and 44.
4. Find the least common multiple of 8, 9, and 12.

READY? OK, DO PROGRESS CHECK A.
NOT READY? DO SOME PROBLEMS FROM THE SOURCES ON THE NEXT PAGE.

UNIT: 11

TOPIC D: FACTORING

EXTRA PRACTICE:

Chk:	Obj:	Source:	Work to do:
	1,2, 3,4	Spectrum Green	Page 45, 1-6
		Spectrum Blue	Page 39, 1-5
	5	Spectrum Yellow	Page 77, 1-5
		Spectrum Green	Page 33, 1-7
		Spectrum Blue	Page 26, 1-7
	6	Spectrum Yellow	Page 99, 1-8; page 100, 1-9; Page 101, 1-10; page 102,1-15
		Spectrum Green	Page 46, 1-6
		Spectrum Blue	Page 40, 1-6

PROGRESS CHECK A

UNIT: 11

TOPIC D: FACTORING CRITERIA 10/10

DO ALL WORK IN YOUR EXERCISE BOOK.

(2) 1. Factor these numbers:

a. 6 = ________ *b.* 9 = ________

(1) 2. In this example 4 X 3 = 12. The 3 and 4 are ______________

(1) 3. What is a "prime number"? ________________________________

____

(4) 4. Factor these numbers to prime factors:

a. 42 = ________ *c.* 50 = ________

b. 286 = ________ *d.* 1,000 = ________

(1) 5. Find the greatest common factor of 40 and 48.

____

(1) 6. Find the lowest common multiple of 15 and 20.

____

PROGRESS CHECK B

UNIT: 11

TOPIC D: FACTORING CRITERIA 9/10

DO ALL WORK IN YOUR EXERCISE BOOK.

(2) 1. Factor these numbers:

a. 4 = ________ b. 15 = ________

(1) 2. In the example $7 \times 3 = 21$, the 7 and the 3 are ________________ of 21.

(1) 3. What is a "prime number"? ________________________________

____

(4) 4. Factor these numbers to prime factors:

a. 36 = ________ c. 54 = ________

b. 84 = ________ d. 216 = ________

(1) 5. Find the greatest common factor of 42 and 60.

____

(1) 6. Find the lowest common multiple of 18 and 24.

____

ANSWER KEY

UNIT 1
Answer Key

Whole Numbers

Reading etc.

1. (a) 3,456 (b) 500,006
2.

T.M	M	H.Th	T.Th	Th	H	T	0
8	7,	4	6	5,	1	0	9

3. (a) 70 (b) 70 (c) 9,750 (d) 876,590
4. (a) 1,000 (b) 98,000 (c) 836,000 (d) 1,112,000

Addition

RAPID REVIEW
1. 11
2. 15
3 (a) 9 (b) 98 (c) 1,967
4. (a) 18 (b) 13 (c) 14 (d) 49 (e) 297 (f) 5636 (g) 653,635
(h) 76 (i) 898 (j) 24,568 (k)1,585,881

PROGRESS CHECK A
1. 2 + 3 = 5
2. (a) 9 (b) 9 (c) 9
3. (a) 7 (b) 19 (c) 22 (d) 2 (e) 10 (f) 10
4. (a) 50 (b) 337 (c) 385 (d) 13,110 (e) 319

PROGRESS CHECK B
1. 5 + 3 = 8
2. (a) 11 (b) 11 (c) 11
3. (a) 9 (b) 9 (c) 13 (d) 4 (e) 204 (f) 11
4. (a) 516 (b) 515 (c) 718 (d) 7031 (e) 464

Subtraction

RAPID REVIEW
1. 3
2. 9
3. (a) 9 (b) 98 (c) 9,874
4. (a) 7 (b) 8 (c) 8 (d) 31 (e) 311 (f) 1,111
(g) 4,615 (h) 64851 (i) 185,989 (j) 482,811

PROGRESS CHECK A
1. (a) 2 (b) 4 (c) 13 (d) 3
2. 9-4=5
3. (a) 2 (b) 2 (c) 42 (d) 9 (e) 2
4. (a) 647 (b) 616 (c) 829 (d) 8158 (e) 921

PROGRESS B
1. (a) 7 (b) 6 (c) 4 (d) 5
2. 8-3=5
3. (a) 2 (b) 7 (c) 56 (d) 6 (e) 4
4. (a) 516 (b) 515 (c) 718 (d) 7031 (e) 464

Whole Numbers

Unit 1
Answer Key

Multiplication

1. (a) 7 (b) 248 (c) 0 (d) 60 (e) 40 (f) 252 (g) 326,634
(h) 68,200 (i) 3,983,250 (j) 7,484,059 (k) 298,200
(l) 6,506,103

PROGRESS A

1. (a) 20 (b) 21 (c) 8
2. 6 x 4=24
3. 4 + 4=8 or 2+2+2+2=8
4. (a) 18 (b) 18 (c) 0 (d) 5 (e) 54
5. (a) 84 (b) 207 (c) 407 (d) 200500 (e) 27 x 31=

$$\begin{array}{r} 407 \\ \underline{24} \\ 1628 \\ \underline{814} \\ 9768 \end{array} \qquad \begin{array}{r} 27 \\ \underline{13} \\ 81 \\ \underline{27} \\ 351 \end{array}$$

PROGRESS CHECK B

1. (a) 28 (b) 56 (c) 77
2. 33 x 4=132
3. 6+6+6+6+6+6+6+6+6=54 or 9+9+9+9+9+9=54
4. (a) 20 (b) 20 (c) 72 (d) 0 (e) 42
5. (a) 63 (b) 112 (c) 260 (d) 4790 (e) 81 x 14=

$$\begin{array}{r} 260 \\ \underline{23} \\ 780 \\ \underline{520} \\ 5980 \end{array} \qquad \begin{array}{r} 81 \\ \underline{14} \\ 324 \\ \underline{81} \\ 1134 \end{array}$$

Problems: Show the work you do to solve problems One mark is for your work, and one mark is for the correct answer.

6. $\begin{array}{r} 800 \\ \underline{6} \\ 4800 \end{array}$ bolts
7. 7 x 5 x 4 = 140 hours

Division

1. 9
2. 9
3. (a) 5 (b) 9 (c) 8 (d) 6 (e) 76 r3 (f) 8 r31 (g) 12
(h) 7 r111 (i) 203 r4 (j) 120 r 65 (k) 14 r1 (l) 257 r139

PROGRESS CHECK A

1. (a) 5 (b) 4 (c) 5
2. 40 ÷ 8=5 $\begin{array}{r} 5 \\ 8\overline{)40} \end{array}$
3. (a) 4 (b) 0 (c) 42 (d) 10 (e) 27 (f) 9

4. (a) $\begin{array}{r} 16 \\ 6\overline{)96} \\ \underline{6} \\ 36 \\ \underline{36} \\ 0 \end{array}$ (b) $\begin{array}{r} 27 \\ 9\overline{)243} \\ \underline{18} \\ 63 \\ \underline{63} \\ 0 \end{array}$ (c) $\begin{array}{r} 5 \\ 40\overline{)205} \\ \underline{200} \\ 5 \end{array}$ 5/40 or 5 1/8

(d) $\begin{array}{r} 21 \\ 352\overline{)7392} \\ \underline{704} \\ 352 \\ \underline{352} \\ 0 \end{array}$ (e) 299 13=$\underline{23}$ $\begin{array}{r} 13 \\ 13\overline{)299} \\ \underline{13} \\ 69 \\ \underline{69} \\ 0 \end{array}$

PROGRESS CHECK B

1. (a) 3 (b) 5 (c) 3

2. 24 6 = 4 $\begin{array}{r} 4 \\ 6\overline{)24} \end{array}$

3. (a) 4 (b) 0 (c) 32 (d) 10 (e) 24 (f) 8

4. (a) $\begin{array}{r} 11 \\ 6\overline{)66} \end{array}$ (b) $\begin{array}{r} 22 \\ 8\overline{)176} \\ \underline{16} \\ 16 \\ \underline{16} \end{array}$ (c) $\begin{array}{r} 32 \\ 30\overline{)965} \\ \underline{90} \\ 65 \\ \underline{60} \\ 5 \end{array}$ 5/30 or 32 1/6

(d) $\begin{array}{r} 24 \\ 465\overline{)11,160} \\ \underline{9\ 30} \\ 1\ 860 \\ \underline{1860} \\ 0 \end{array}$

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

5. $\begin{array}{r} 5 \\ 14\overline{)70} \\ \underline{70} \end{array}$ 5 days

6. $\begin{array}{r} 6 \\ 36\overline{)216} \\ \underline{216} \\ 0 \end{array}$ \$6 per hour

Word Problems

1. 600 lbs.
2. $10.00
3. 54,600 copies
4. 4 orders

1. 90¢
2. 1,025 calories
3. 27 inches
4. $137.50
5. 5 gallons
6. 945 miles
7. 6 pieces
8. $160.00
9. 1,259
10. 4 inches
11. $60.00
12. 42 inches

PROGRESS CHECK A

```
1.   298  They collected $4,470.00
     x15
    1490
    298
    4470

2.  18,500     $13,550 still to be paid
   - 4,950
    13,550

3.   5
     3         14 birds
     4
     2
    14

       147
4.  7)1029
      7
      32
      28
       49
       49
        0
```

```
5.  down pmnt. =     $  400.00
    mo. pmnts.         1920.00
    Total              2320.00

    Less cash price    2150.00
    Price Diff.      $  170.00

80 x 24 = 1920
```

He can save $170.00 by paying cash.

PROGRESS CHECK B
(Problem Solving)

Unit 1
Answer Key

1.
$$\begin{array}{r} 127 \\ 47 \\ 62 \\ \hline 236 \end{array}$$

236 Stamps

2.
$$\begin{array}{r} 526 \\ 307 \\ \hline 219 \end{array}$$

219 more than Bill

3.
$$\begin{array}{r} 23 \\ \times\ 28 \\ \hline 184 \\ 46 \\ \hline 644 \end{array}$$

644 more

4.
$$\begin{array}{r} 147\ 33/37 \\ 37\overline{)5472} \\ 37 \\ \hline 177 \\ 148 \\ \hline 292 \\ 259 \\ \hline 33 \end{array}$$

Each person got 147 stamps

Tom was left with 33 stamps

5.
$$\begin{array}{r} 39 \\ \times\ 5 \\ \hline 195 \end{array} \qquad \begin{array}{r} 13 \\ \times\ 38 \\ \hline 104 \\ 39 \\ \hline 494 \end{array} \qquad \begin{array}{r} 12 \\ \times\ 37 \\ \hline 84 \\ 36 \\ \hline 444 \end{array} \qquad \begin{array}{r} 195 \\ 494 \\ 444 \\ \hline 1133 \end{array}$$

The total enrollment is 1133 students

ANSWERS:

Famous Alaskans puzzle #1

GEORG W. STELLER

Math Answers:

A. 624
B. 632
C. 900
D. 4,738
E. 1,954
F. 1,301
G. 5,725
H. 66
I. 329

J. 1,754
K. 1,058
L. 1,685
M. 679
N. 5,040
O. 97
P. 248
Q. 352

R. 157
S. 5,496
T. 210
U. 76
V. 3,417
W. 494
X. 2,742
Y. 2,159
Z. 34

Famous Alaskans puzzle #2

WALTER HICKEL

Math Answers:

A. 198
B. 355
C. 231
D. 178
E. 278
F. 143
G. 93
H. 206
I. 99

J. 1,023
K. 1,622
L. 1,199
M. 385
N. 181
O. 1,180
P. 1,920
Q. 1,156

R. 220
S. 2,390
T. 2,135
U. 215
V. 352
W. 1,660
X. 2,064
Y. 2,402
Z. 2,156

ANSWERS:

Alaska Place Puzzle #1

COOK INLET

1. 32 students
2. $16.17
3. $1.46
4. $1,800.
5. 3 years
6. 36 women
7. 27 words
8. 25 inches

Alaska Place Puzzle #2

ADAK

1. 25%
2. 62 1/2%
3. 20%
4. 87 1/2%

ANSWER to Measurement in Inches--Reading a Secret Code:

BIRDS OF A FEATHER FLOCK TOGETHER

ANSWER to Measurement in Metrics--Reading a Secret Code:

A FISH IN THE NET IS WORTH TWO IN THE RIVER

Fractions

Unit II
Answer Key

RAPID REVIEW

1. 5 of 8 parts
2. (a) 1 (b) 1 (c) 1
3. (a) 3/4 (b) 1/2 (c) 2/3 (d) 3/4
4. (a) 2 1/2 (b) 1 1/2 (c) 2 (d) 2 2/5
5. 2/16, 2/6, 12/24, 6/8, 12/12

PROGRESS CHECK A

1. two parts of three equal parts
2. 2
3. (a) 2/3 1. 1 2/3
   (b) 1 2/3 2. 2/3
   (c) 3/2 3. 3/2

4. (a) 1 (b) 2 (c) 4/5

5. 2 1/3
6. 48/5
7. (a) 9 (b) 9 (c) 108
8. 2/3

PROGRESS CHECK B

1. 4/7
2. 18
3. (a) 5/16 commom fraction
   (b) 9/8 improper fraction
   (c) 17 1/5 mixed number

4. (a) 5/7 (b) 3 (c) 1

5. 1 1/27
6. 38/3
7. 4/6 6/9 8/12 -----any three fractions like these
8. 5/6

Addition
RAPID REVIEW

1. (a) 1 (b) 8/16=1/2 (c) 3/6=1/2
2. (a) 4/6=2/3 (b)19/35 (c) 19/24 (d) 4 3/4 (e) 31 1/5
   (f) 72 1/3

PROGRESS CHECK A

1. (a) 5/5 = 1 (b) 4/8 + 7/8 = 11/8 = 1 3/8

   (c) 2 5/20 + 16/20 = 2 21/20 = 3 1/20

   (d) 19/3 = 6 1/3 (e) 3 9/12 + 1 8/12 = 4 17/12 =5 5/12

Fractions cont.

f. 2 15/24
1 20/24
3 35/24 = 4 11/24

g. 3 4/5
1
4 4/5

h. 42 1/5
7 4/5
49 5/5 = 50

PROGRESS CHECK B

1. (a) 6/4 = 1 2/4 = 1 1/2
(b) 10/12 +13/12 = 1 1/2
(c) 20/6 + 7/6 = 27/6 = 4 3/6 = 4 1/2
(d) 2 32/40 + 1 35/40 = 3 67/40 = 4 27/40
(e) 4 2/18 + 3/18 = 4 5/18
(f) 3 12/21
1 14/21
4 26/21 = 5 5/21
(g) 5 1/6
1
6 1/6
(h) 56 1/8
43 7/8
99 8/8 = 100

Subtraction

1. (a) 2/12 = 1/6 (b) 2/8 = 1/4 (c) 2/16 = 1/8

2. (a) 3/6 = 1/2 (b) 7/10 (c) 11/20 (d) 4 3/14
(e) 1 7/12 (f) 21 7/8

PROGRESS CHECK A

a. 2/7
b. 10/12 - 9/12 = 1/12
c. 5 7/8 - 6/8 = 5 1/8
d. 3 4/3 - 2/3 = 3 2/3
e. 3 5/20 - 2 14/20 = 2 25/20 - 2 14/20 = 11/20
f. 9 9/12
1 4/12
8 5/12

g. 9 5/6
2
7 5/6

h. 10 4/7
1 4/7
9

PROGRESS CHECK B

1. (a) 2/5 (b) 9/21 - 7/21 = 2/21
(c) 2 9/12 - 8/12 = 2 1/2
(d) 4 7/6 - 5/6 = 4 2/6 = 4 1/3
(e) 2 15/24 - 1 20/24 = 1 39/24 - 1 20/24 = 19/24
(f) 11 11/8
7 7/8
4 4/8 = 4 1/2

g. 6 3/10
5
1 3/10

h. 14 1/8
4 1/8
10

Multiplication

1. 4/3 = 1 1/3   (b) 23/2   (c) 24/5 = 4 4/5   (d) 28/5 = 5 3/5
   (e) 3/16   (f) 14/48 = 7/24   (g) 5/12   (h) 56/216 = 7/27
2. (a) 42/50 = 21/25   (b) 69/50 = 1 19/50   (c) 40/15 = 2 2/3
   (d) 60/3 = 20   (e) 684/7 = 97 5/7   (f) 684/2 = 342
   (g) 722/50 = 12 11/25   (h) 759/22 = 34 1/2   (i) 370/6 =61 2/3

PROGRES CHECK A

1. (a) $\frac{\cancel{4}}{1} \times \frac{3}{\cancel{4}} = 3 = 3$ (b) 18/35

   (c) $\frac{5}{2} \times \frac{7}{4} = 35/8 = 4\ 3/8$

   (d) $\frac{\overset{2}{\cancel{6}}}{5} \times \frac{10}{\cancel{3}} = 20/5 = 4$

   (e) $\frac{1}{5} \times \frac{\cancel{20}^{6}}{1} = 6$

   (f) $1/3 \times 3\ 3/4 = \frac{1}{\cancel{3}} \times \frac{\cancel{15}^{5}}{4} = 5/4 = 1\ 1/4$

   (g) 5/1 x 35/8 = 175/8 = 21 7/8

   (h) $\frac{16}{\cancel{5}} \times \frac{\cancel{5}}{\cancel{4}} \times \frac{\cancel{4}}{3} = \frac{16}{3} = 5\ 1/3$

PROGRESS CHECK B

1. (a) 5/1 x 2/3 = 10/3 = 3 1/3

   (b) $\frac{\cancel{3}}{7} \times \frac{8}{\cancel{9}_{3}} = 8/21$

   (c) 11/2 x 9/4 = 99/8 = 12 3/8

   (d) $\frac{\overset{6}{12}}{11} \times \frac{5}{\cancel{2}} = \frac{30}{11} = 2\ 8/11$

(Check list B cont.)

e. 1/3 x 72/1 = 24

f. $\frac{1}{\cancel{6}_{2}} \times \frac{\cancel{3}}{4} = 1/8$

g. 15/2 x 6/1 = 90/2 = 45

h. $\frac{11}{4} \times \frac{\cancel{9}^{3}}{8} \quad \frac{23}{\cancel{6}^{2}} = \frac{759}{64} = 11\ 55/64$

Division

1. (a) 75 (b) 16 (c) 25 (d) 27 (e) 2/3 (f) 4/3 = 1 1/3
   (g) 9/2 = 4 1/2

2. (a) 2/24 = 1/12 (b) 1/32 (c) 1/8 (d) 1/10
   (e) 12/5 = 2 2/5 (f) 3/5 (g) 1 1/8

PROGRESS CHECK A

1. (a) 1/2 x 4/1 = 4/2 = 2
   (b) 2/3 5/1 = 2/3 x 1/5 = 2/15
   (c) 8/1 x 4/3 = 32/3 = 10 2/3
   (d) 6/1 5/2 = 6/1 x 2/5 = 2 2/5
   (e) $\frac{62}{7} \quad \frac{2}{9} = \frac{\overset{31}{\cancel{62}}}{7} \quad \frac{9}{\cancel{2}} = \frac{279}{7} = 39\ 6/7$
   (f) $\frac{37}{7} \quad \frac{111}{49} = \frac{37}{\cancel{7}} \times \frac{49}{111_{3}} = \frac{7}{3} = 2\ 1/3$
   (g) $\frac{\cancel{5}}{\cancel{9}} \times \frac{\cancel{21}^{7}}{\cancel{15}_{3}} = \frac{7}{9}$
   (h) 1/1 x 6/5 = 6/5 = 1 1/5

PROGRESS CHECK B

1. (a) $\frac{3}{4} \times \frac{\cancel{6}}{5} = \frac{9}{10}$

   (b) $\frac{21}{5} \div \frac{10}{3} = \frac{21}{4} \times \frac{3}{10} \quad \frac{63}{50} = 1\ 13/50$

   (c) $\frac{4}{7} \div \frac{4}{1} = \frac{4}{7} \times \frac{1}{\cancel{4}} = \frac{1}{7}$

   (d) $\frac{\overset{5}{\cancel{10}}}{1} \times \frac{5}{\cancel{4}_{2}} = \frac{25}{2} = 12\ 1/2$

   (e) $\frac{16}{1} \div \frac{5}{2} = \frac{16}{1} \times \frac{2}{5} \quad \frac{32}{5} = 6\ 2/5$

   (f) $\frac{11}{3} \times \frac{4}{9} = \frac{44}{27} = 1\ 17/27$

   (g) $\frac{15}{2} \div \frac{5}{4} = \frac{{}^{3}\cancel{15}}{\cancel{2}} \quad \frac{\cancel{4}^{2}}{\cancel{5}} = 6$

   (h) 1/1 x 8/5 = 8/5 - 1 3/5

Word Problems

1. 1313 gallons
2. 5384 feet
3. 4550
4. 392 miles per hour
5. Alaska 606,400 sq. miles, Hawaii 6,424 sq. miles
   difference 599,976 sq. miles
6. 16 13/16 inches
7. (a) 96¢ (b) 90¢ (c) 91¢
8. 2 2/5 degrees
9. 1/8 cup flour, 1 1/4 tbsp juice
10. 9 7/8 ounces
11. 3/8 gallon
12. 12 1/2 hours
13. 6 3/4 lbs.
14. 222 1/4 lbs.
15. 10 1/4 man hours

PROGRESS CHECK A

Problems: Show the work you do to solve problems. One mark is for your work, and one mark is for the correct answer.

1. 9/45 or 1/5

2. $15\frac{3}{4}$ $\quad 2\frac{1}{4} = \frac{63}{4} \quad \frac{9}{4} = \frac{\overset{7}{\cancel{63}}}{\cancel{4}} \times \frac{\cancel{4}}{\cancel{9}} = 7$

3.
$$\begin{array}{r} 5\frac{3}{4}\\ 2\frac{2}{3}\\ \underline{1\frac{1}{2}} \end{array} \quad \begin{array}{r} 5\frac{9}{12}\\ 8\frac{8}{12}\\ \underline{1\frac{6}{12}}\\ 8\frac{23}{12} \end{array} \times 9\frac{11}{12}$$

$9\frac{11}{12}$ hours

or 9 hours and 55 minutes

4.
$$\begin{array}{r} 2\frac{1}{4}\\ \underline{3\frac{2}{5}} \end{array} \quad \begin{array}{r} 2\frac{5}{20}\\ \underline{3\frac{8}{20}}\\ 5\frac{13}{20} \end{array} \quad \begin{array}{r} 14\frac{20}{20}\\ \underline{5\frac{13}{20}}\\ 9\frac{7}{20} \end{array}$$

Total distance is 15 kilometers less distance travelled $5\frac{13}{30}$ kilomete

$9\frac{7}{20}$ --kilometres to travel to reach work

PROGRESS CHECK B

Show the work you do to solve problems.

1.
```
4 1/2     4 6/12
6 3/4     6 9/12
5 1/6     5 2/12          29 1/2 Hours
6 1/3     6 4/12
6 1/3     6 4/12
         27 25/12 = 29 1/2
```

2. 1 3/8 x 3 = 11/8 x 3/1 = 33/8 = 4 1/8 metres for the 3 boards

```
 7 4/5    7 32/40
-4 1/8   -4  5/40     The board is 3 27/40 metres long when
          3 27/40     he has finished with it
```

(Progress B cont.)

3. 16 4/7   3 1/7 = 116/7   22/7 = 116/7 x 7/22 = 116/22 = 5 Boards can be cut (6/22 is the remainder of wood left.) (5 6/22)

4. $4\frac{3}{4} \times 42 = \frac{19}{\cancel{4}_{2}} \times \frac{\overset{21}{\cancel{42}}}{1} = \frac{399}{2} = 199\ 1/2$ minutes
200 minutes rounded off to the nearest minute

Unit III
Answer Key

RATIO & PROPORTIONS

Reading & Writing

Sample Probems

1. (a) 10/3 or 10:3 (b) 3/10 or 3:10 (c) 4/1 or 4:1
(d) 1/10 or 1:10 (e) 1/9 or 1:0 (f) 1/3 or 1:3
(g) 3/2 or 3:2 (h) 9/8 or 9:8 (i) 5/9 or 5:9
(j) 9/4 or 9:4 (k) 7/93 or 7:93 (l) 1/31 or 1:31
(m) 96/6 or 96:6 (n) 3/2 or 3:2 (o) 3/2 or 3:2
(p) 4/1 or 4:1 (q) 1/5 or 1:5 (r) 10/11 or 10:11
(s) 1/3 or 1:3 (t) 39/89 or 39:89 (u) 87/7 or 87:7
(v) 121/144 or 121:141
2. (a) F (b) F (c) T (d) T (e(T (f) T (g) G
(h) T (i) T (j) F (k) T
3. (a) F (b) T (c) T (d) T (e) T (f) T (g) T
(h) T

RAPID REVIEW

1. 2/3 or 2:3 2. 2/3 = 14/21

OPERATIONS

Sample Problems

1. (a) 300:90 = 10:3 (b) 90:45 = 2:1
(c) 315:45 = 7:1 (d) 2000:115 = 400:23
2. (a) 23/96 (b) 135/50 = 27/10 (c) 21/13 (d) 139/210
(e) 14/21 ≐ 2/3 (f) 83/39 (g) 37/67 (h) 24/4 = 6/1
(i) 69/38 (j) 4/1 (k) 15/35 = 3/7 (l) 115/350 = 23/70
3. (a) N=10 (b) n=3 (c) n=7 (d) n=1 (e) n=12 (f) n=1
(g) n=3 (h) n=9 (i) n=14 (j) n=32
4. (a) n=15 (b) n=3 (c) n=10 (d) n=5 (e) n=6
(f) n=1 (g) n=12 (h) n=3 (i) n=1 (j) n=1
(k) n=7.5 (l) n=256 (m) n=9 (n) n=4

RAPID REVIEW

1. 4/12=1/3
2. (a) h=10.5
(b) n=4.8

PROGRESS CHECK A

1. 26:52 1;2 or 1/2 (b) $\frac{10,\cancel{000}}{200} = \frac{100}{2} = \frac{50}{1}$ or 50:1
2. (a) 12:3 = (8) :2 (b) 20: (15) = 8:6
(c) 6/15 = 4/(10) (d) (18)/42 = 30/70
3. 8/6 = 12/? $? = \frac{\overset{3}{\cancel{6}}(\overset{3}{\cancel{12}})}{\cancel{8}2} = 9$ 9 tblspn. of shortening
4. 3/8 = n/464 · N = $174.00 spends 3 out of every 8 dollars
(3/8) The set cost $174.00

Progress Check A cont.

Unit III
Answer Key

5. 28 people − 21 women = 7 men; ration $\frac{7 \text{ men}}{28 \text{ people}} = 1/4$ 1/4 of the people are men

PROGRESS CHECK B

1. a. 15 Total − 12 Right = 3 Wrong; 12/3 = 4/1 or 4:1

b. 6/18 = 1/3 or 1:3

2.

a. 3:2 = 24: (16) 3/2 = 24/? ? = $\frac{2(\overset{8}{\cancel{24}})}{\cancel{3}} = 16$

b. (3) : 7 + 27:63 ?/7 = 27/63 ? = $\frac{\cancel{7}(\overset{3}{\cancel{27}})}{\underset{9}{\cancel{63}}} = 3$

c. 3/5 = (24)/40 3/5 = ?/40 ? = $\frac{3(\overset{8}{\cancel{40}})}{8} = 24$

d. 9/15 = 21/ (35) 9/15 = 21/? = $\frac{\overset{5}{15}\ (\overset{2}{\cancel{21}})}{\cancel{9}_{\cancel{3}}} = 35$

3.

12/15 = 80¢/? ? = $\frac{\cancel{15}(\cancel{80})}{\cancel{12}_{\cancel{4}}}$ = 100 cost is \$1.00

4. $2/9 = \frac{8.80}{N}$ $N = \frac{9(8.80)}{2} = 39.60$

5. If 2/9 of the cars tested were unsafe, then
9/9 - 2/9 = 7/9 of the cars were safe
7/9 = 161/n N = 9(161)/7 = 207
207 cars were tested.

WORD PROBLEMS
REQUIRED REVIEW

1. 229 birds
2. 4034 feet
3. 12, 750
4. 182 miles
5. 1 1/3 hours
6. 1/15 hours
7. 9 7/20 gallons
8. 16 bags
9. 144/156 = 12/13
10. 12/156 = 1/13
11. 20/144 = 5/36
12. 6/16 = 3/8
13. 159 pieces
14. 87/75
15. 65 miles
16. 24 tablespoons
17. .64 hours
18. 84 cupcakes
19. 800 iles
20. $2.16

PROGRESS CHECK A

1. $8/9 = ?/18 \quad ? = \frac{8(\overset{2}{\cancel{18}})}{\cancel{9}} = 16$ 16 students were present

2. games played 18 18/8 = 4/9
games won 10
games lost 18 The ration is 4/9 or 4:9

3. $12/5 = 2.16/? \quad ? = \frac{5(2.16)}{12} = \frac{10.86}{12} = 9$

4 $11/20 = 2255/? \quad ? = \frac{20(2255)}{11} = \frac{45100}{11} = 4100$

The cost is $4100

Unit III
Answer Key

PROGRESS CHECK B
Ration & Proportions

1. $\frac{.75}{3.00} = \frac{75}{300} = \frac{1}{4}$ The ratio is 1/4 or 1:4

2. $\frac{\overset{7}{\cancel{\overset{21}{\cancel{126}}}}}{\underset{9}{\cancel{\underset{27}{\cancel{162}}}}} = 28/?$ $? = \frac{9(\overset{4}{\cancel{28}})}{\cancel{7}} = 36$

They would win 36 games

3. 3/6 = 10/? ? = 20¢
3/9 = 56/? ? = \$1.68
3/5 = 54/? ? = 90¢

4.
$3/8 = ?/5768$ $? = \frac{3(5768)}{8} = 2163$

2163 cars were recalled

Unit IV
Answer Key

Decimal: Reading, Writing, Rounding Off

RAPID REVIEW

1. (a) 3/10 (b) 159/1000 (c) 98/10000 (d) 91/1000
2. (a) .7 (b) .25 (c) 2.8 (d) .753
3. (a) .3 (b) .8 (c) 1.00 (d) 2.8
4. (a) .858 (b) .350 (c) 18.355 (d) .010

PROGRESS A

1. A fractional number whose denominator is some power of ten.
   examples 3.0, 15.7, 131.075
2. (a) three tenths (b) five and five hundredths
   (c) fifty-six and four hundred seventy-two thousandths
3. (a) 0.7 (b) 6.6 (c) 0.072 (d) 105.40
4. 0.46
5. (a) 9.6 (b) 9.573

PROGRESS CHECK B

1. a fractional number whose denominator is some power of ten.
2. (a) one tenth (b) three and sixty-five hundredths
   (c) twenty-nine and five hundred two thousandths
3. (a) 0.9 (b) 12.5 (c) 0.56 (d) 22.269
4. 0.892, 0.982, 8.92, 98.2
5. (a) 8.2 (b) 8.16

Addition & Subtraction

RAPID REVIEW

1. (a) 9.5 (b) 48.49 (c) 4.949 (d) 24.831
2. (a) .31 (b) 38.91 (c) 5.133 (d) 66.661

Multiplication & Division

1. (a) 1.38 (b) 381.7 (c) 33.6 (d) 9.6 (e) 0.6606
   (f) 1.296 (g) 0.00252 (h) 0.02418 (i) 20.61
   (j) 1.224
2. (a) 0.16 (b) 1.8 (c) 0.0014 (d) 12 (e) 3.6
   (f) 0.034 (g) 15,000 (h) 20.

PROGRESS CHECK A (Show your work)

```
1. (a) 3.04       (b) 0.025       (c)  193.2
        .19           .0334              8.76
       -----          -----           -------
       2736             100            115 92
        304              75           1352 4
       -----            ---           15456
       .5776        .0008350          --------
                                      1692.432
```

(Progress A cont.)

```
2.  (a)      16.000
        21.7)347.2
             217
             1302
             1302
```

```
(b)      2.100
     .005).0105
           10
           05
            5
```

```
(c)       4.010
       88)352.88
          352
            0 88
              88
```

```
(d)      0.043
    35.7)1.5351
         1 428
           1071
           1071
```

```
(e)    .666
    12)8.000
       7 2
         80
         72
         80
         72
          8
```

PROGRESS CHECK B

```
1. (a)    8.123
          4.567
        56 861
       487 38
      4061 5
     32492
     37.097741
```

```
(b)  9.023
      .035
     45115
    27069
   .315805
```

```
(c)  121
     .10
     12.1
```

```
2.  (a)       .270
         11.9)3.213
              2 38
               833
               833
                 0
```

```
(b)     .00 5
     18).09 0
          9 0
          0
```

```
(c)          91000.000
       .086)7826. 000000
            774
             86
             86
              0
```

```
(d)        3.300
        48)158.4
           144
            144
            144
              0
```

```
(e)      .0045
    100) .450
          400
           500
           500
             0
```

answer .004 or .005 if rounded off

```
3.          4.3
     45.6)200.00
          182 4
          1760
          1368
           392
```

4.4 hrs. to the nearest tenth of an hr.

```
4.  3.2 x 3 hrs. = 9.6 K.H.
    9.6
    7.5
    480
   672
   72.00
```

72 Cents

Equivalents

RAPID REVIEW

1. (a) 0.25 (b) 0.50 (c) 0.6 (d) 0.86 (e) 0.3 (f) 0.01
   (g) 0.2 (h) 0.43 (i) 0.83 (j) 0.24 (k) 0.39 (l) 0.56
2. (a) 3/10 (b) 5/10=1/2 (c) 25/100=1/4 (d) 5/10000 (e) 9/10
   (f) 1 5/10= 1 1/2 (g) 3.625/1000=3 5/8 (h) 75/1000=3/40
   (i) 5 8/10=5 4/5 (j) 1/10000

PROGRESS CHECK A

1. (a) 0.8 (b) 1.4 (c) 0.6 (d) 0.7
2. (a) 4/5 (b) 1 1/4 (c) 5 16/25 (d) 0.7
3.

```
 5.5                         (b)  10.05
+2.25   7.75 or 7 3/4             -5.40
 7.75                              4.65  or 4 13/20
```

   (c) 1/4 x 96 = 96/4 = 24 (d) (.375) or 3/8 inch
4. $5.68
5. <u>3</u> dollars, <u>3</u> quarters, <u>2</u> dimes
6. Show your work.

```
    17.45          34.90
 2)34.90           17.45
   2               52.35
   14
   14         Total cost $52.35
    09
     8
     10
     10
```

PROGRESS CHECK B

1. (a) 0.3 (b) 1.2 (c) 0.56 (d) 0.416
2. (a) 2/5 (b) 1 3/4 (c) 2 21/50 (d) 1/20
3. (a) 4.0625 (b) 90

   (c) $\frac{4}{\cancel{5}} \times \frac{\overset{38}{\cancel{190}}}{1} = 4 \times 38 = 152$

   (d) (.4375) or 7/16 inch
4. $7.75
5. <u>4</u> dollars, <u>3</u> quarters, <u>4</u> pennies

(progress check B Cont.)

6. 1/3 of 69 = $\frac{1}{3} \times \overset{23}{\cancel{69}} = 23¢$

original price	69¢
less 1/3 off	23¢
Sale Price	46¢

For six tubes 46 x 6 = $2.76
it would cost $2.76 for six tubes
at the sale price

Money Systems

1. (a) 41¢ (b) 56¢ (c) 83¢ (d) 51¢ (e) 42¢
2. (a) $40.00 + $1.00 + $0.40 + $0.07
   (b) $10.00 + $1.00 + $0.90 + $0.05
   (c) $5.00 + $.0.40
   (d) $40,000.00 + $5,000.00 + $200.00 + $70.00 + $6.00 + $0.90 + $.08
3. A. (a) 23¢ (b) 16¢ (c) 47¢
   B. (a) $.86 (b) $1.01 (c) $.73
4. (a) $5.45 (b) $.34 (c) $8.02 (d) $10.09
5. (a) 4 coins (b) 4 coins (c) 1 bill & 6 coins
6. (a) 1¢ + 25¢ (b) 4 x 1¢, 5¢ & 25¢
7. (a) 3 x 1¢,5¢, 3 x 25¢, 2 x $1.00, $5.00
   (b) 2 x 1¢, 3 x 25¢, 2x $1.00, $5.00
   (c) 1¢, 2 x 10¢, 3 x 25¢, $5.00
8. $6.43
9. $9.94

RAPID REVIEW

1. (a) $6.35 (b) $10.47 (c) $2.58 (d) $18.84
2. (a) $5.49 (B) $4.01 (c) $3.02 (d) $50.05
3. (a) $8.94 (b) $419.30 (c) $329.34 (d) $125.00
4. (a) $1.19 (b) 6 (c) 11

Word Problems

1. $2.30
2. $.30
3. 5 with 5 leftover
4. total 13 3/4 lb. average
5. 166.6 mph or 166 2/3 mph
6. 320 mph
7. $6.67
8. 2 cement, 8 gravel
9. 5/25 or 5:25
10. 2090
11. 39.2 inches
12. $74.35
13. $1090.52
14. $8348.33
15. (a) $.41 (b) $3.11
    (c) $9.03 (d) $1.55
16. 373.75 mph
17. 197.1 gallons
18. 6 pounds
19. 4 pounds
20. $.06

PROGRESS CHECK A

1. 24
x.008
.192

0.192 metre thick

2. 3.175
4)12.70
12
7
4
30
28
20

3.175 metres for each part

3. 327.8
154
624.2
458.4
249.6
1814.0

1814 kilometres

4. 41.540
- .005
41.535

41.535 metres

PROGRESS CHECK B

1. $\frac{.6}{.8} = \frac{10.8}{?}$ $? = \frac{(.8 \times 10.8)}{.6} = 14.4$

14.4 litres when 0.8 full

2. 3.75
72
750
2625
270.00

$270.00 for the dresses

3. .085
96)8.16
768
480
480

8.5¢ each
Total # of bars = 8 x 12 = 96 bars

4. 105.2
94.7
153.5
57.9
174.8
586.1

586.1 kilometres

Unit V
Answer Key

Per Cent

Reading & Writing

RAPID REVIEW

1. .52
2. 124%
3. 64/100 = 16/25
4. (a) 62.5% (b) 260%

PROGRESS CHECK A

1. five percent
2. percent
3. 8/100
4. all of it
5. (a) 0.4 (b) 0.015 (c) 1.25 (d) 0.58
6. (a) 56% (b) 127% (c) 7 1/2% (d) 87 1/2%
7. (a) 3/5 (b) 1/8 (c) 1/4 (d) 1 3/4
8. (a) 66 2/3% (b) 50% (c) 84% (d) 162 1/2%

PROGRESS CHECK B

1. 5/100
2. sixty percent
3. per 100
4. 1/2 of it
5. (a) 0.5 (b) 0.275 (c) 1.1 (d) 0.47
6. (a) 32% (b) 235% (c) 2 1/2% (d) 62 1/2%
7. (a) 7/10 (b) 3/8 (c) 3/4 (d) 2 1/4
8. (a) 33 1/3% (b) 125% (c) 62% (d) 62.5%

Operations

RAPID REVIEW

1. 18.81
2. (a) 60% (b) 25%
3. 80

PROGRESS CHECK A

1. (a) 3 (b) 1.125 (c) 84 (d) 80 (e) 50 (f) 150
   (g) 200 (h) 40 (i) 275
2. 80%
3. $4.20
4. $375.00

PROGRESS CHECK B

1. (a) 2.1 (b) 4.375 (c) 176 (d) 80. (e) 5 (f) 166 2/3
   (g) 260 (h) 48 (i) 400
2. 66 2/3%
3. $60.00
4. $32.00

Word Problems
REQUIRED REVIEW

1. $2.44
2. 120 students
3. 4 1/4 cups
4. 120 mph
5. 4:18 or 2:9 4/18 or 2/9
6. 32 1/2°
7. 197.1 gallons
8. 5 pounds
9. 10 words
10. 60% of the students
11. $.25 or $.26 rounded to the nearest tenth
12. $35.00
13. 40%
14. 64%
15. 53%
16. $32.00
17. $750,000.00
18. $2000.00
19. 13%

20 176 pounds

PROGRESS CHECK A

1. 36 students
2. 4/3% of the milk was butterfat
3. $287.50 selling price
4. $200.00 without tax

PROGRESS CHECK B

1. 180 kilometres
2. 5000 kilograms
3. $28.35 paid
4. $140.00 earned

VI. CONSUMER MATH

A. Checking Account

RAPID REVIEW

1. Money can be lost or stolen
   Payment on a check can be stopped
   Can pay bills by mail
   Can write a check for any amount of money in account
   Cancelled check is record of payment and proof of payment
   Can only be cashed when endorsed
2. Fill out a signature card
3. Write your signature on the tope of the back of the check

PROGRESS CHECK
(Answers on pp. 101-116 in T.E. of Mathematics for Citizenship)

B. Savings Account

RAPID REVIEW

1. Federal Deposit Insurance Corporation
2. Regular savings account can be opened for any amount of money. Deposits or withdrawals can be made at any time, any amount.
3. Time deposit account requires minimum deposit (ie $500.00). Money must be left in account for a certain period of time to earn interest. Automatic renewal of time period if money is not withdrawn within 10 days after account matures.
4. The card filled out by a potential depositor to open an account.

PROGRESS CHECK
(Answers on pp. 45-50 in T.E. of Mathematics for Banking)

C. Mail Order Buying

RAPID REVIEW

1. Zone 8
2. Cash on Delivery
3. $2.10
4. Your name, mailing address, catalog number, how many of each item, description of item, name of item, unit price, total price, shipping weight, total of prices and shipping weights, tax, postage, amount enclosed.

PROGRESS CHECK
(answers will vary)

VI. CONSUMER MATH

D. Budgeting

RAPID REVIEW

1. A plan of your future income and expenses for a specific period of time.
2. Your earnings and expenses.

PROGRESS CHECK

(Answers on pp. 120-130 in T.E. of Mathematics for the Worker)

E. Income Tax

RAPID REVIEW

1. $13,258.67
2. $ 9,769.87

PROGRESS CHECK

(Checked by teacher)

F. Social Security

RAPID REVIEW

1. $14.04
2. $52.00

PROGRESS CHECK

1. $72.54
2. $582.40
3. (a) No (b) $36.27
4. (a) $106.65 (b) $319.95 (c) Yes
5. $284.40
6. (a) $177.25 (b) $177.25 (c) $709.00
   (d) No (e) $620.40

G. Stocks and Bonds

RAPID REVIEW

1. (a) $48 (b) 1/400
2. (a) 8.0% (b) 8.9%

PROGRESS CHECK

(Answers on pp. 94-95 in T.E. of Consumer Activities Book)

ANSWERS - UNIT 7 MEASUREMENT

TOPIC B: DISTANCE

RAPID REVIEW

1. 3 3/4
2. a. in. b. ft. c. yd.
3. a. 12 b. 3 c. 5,280 d. 1,760
4. a. 2 b. 5 c. 1 2/3 d. 2

PROGRESS CHECK A

1. feet, miles
2. a. 3 b. 12 c. 10,560 d. 156 e. 2 f. 24
3. 3 3/8
4. 1.2 ft.
5. 6 hours
6. 12 blocks

PROGRESS CHECK B

1. inches, feet
2. a. 2 b. 24 c. 5,280 d. 180 e. 1 f. 48
3. 3 1/4
4. 35 feet
5. 60 m.p.h.
6. 30 feet

TOPIC C: LIQUID

RAPID REVIEW

1. a. pt. b. qt. c. fl. oz.
2. a. 1 b. 16 c. 2 d. 4
3. a. 4 b. 9 c. 128 d. 14

PROGRESS CHECK A

1. quarts, cups
2. a. 4 b. 200 c. 6 d. 16
3. a. 1.5¢ b. 2.2¢ c. 1.3¢ d. 0.7¢ e. 4.4¢
4. a. 6.6¢ b. 5.5¢ c. 20 fl. oz.

ANSWERS - UNIT 7 MEASUREMENT (continued)

TOPIC C: LIQUID

PROGRESS CHECK B

1. cups, fluid ounces
2. a. 4 b. 8 c. 6 d. 16
3. a. 1.1¢ b. 38.8¢ c. 0.4¢ d. 1.3¢ e. 1.6¢
4. a. 1.00¢ b. 1.00¢

TOPIC D: WEIGHT

RAPID REVIEW

1. a. oz. b. lb. c. t
2. a. 16 b. 2000
3. a. 32 b. 12,000 c. 3 d. 128,000

PROGRESS CHECK A

1. ounces, pounds
2. a. 2,000 b. 3,200 c. 3 d. 9
3. a. 4¢ b. 10¢
4. a. 3¢ b. 60¢
5. $37.50
6. 6 lb. at $5.34

PROGRESS CHECK

1. ounces, pounds
2. a. 10 b. 1 c. 5 d. 2
3. a. 3¢ b. 47¢
4. a. 52¢ b. 3¢
5. 26¢
6. $1.90 for 4 lb.

TOPIC E: OPERATIONS

RAPID REVIEW

1. a. 13 ft. 10 in. b. 13 ft. 2 in. c. 12 hr. 0 min.
   d. 12 lb. 10 oz. e. 10 gal. 0 qt. f. 9 wk. 0 da.
   g. 11 lb. 0 oz. h. 15 gal. 1 qt.
2. a. 1 lb. 3 oz. b. 1 lb. 14 oz. c. 4 ft. 6 in.
   d. 1 yd. 34 in. e. 12 yd. 0 ft. f. 1 gal. 3 qt. 0 pt.
   g. 8 lb. 13 oz.
3. a. 17 ft. 0 in. b. 21 lb. 0 oz. c. 7 gal. 0 qt.
4. a. 2 lb. 1 oz. b. 2 gal 1 qt. c. 5 mi. 50 ft.

ANSWERS - UNIT 7 MEASUREMENT (continued)

TOPIC E: OPERATIONS

PROGRESS CHECK A

1. a. 10 ft. 1 in. b. 4 ft. 6 in.
2. a. 4 qt. 0 pt. b. 0 pt. 8 fl. oz.
3. a. 9 lb. 0 oz. b. 4 lb. 12 oz.

PROGRESS CHECK B

1. a. 13 ft. 2 in. b. 5 ft. 8 in.
2. a. 4 gal. 1 qt. b. 2 gal. 2 qt.
3. a 8 lb. 1 oz. b. 9 lb. 10 oz.

TOPIC F: WORD PROBLEMS

REQUIRED REVIEW

1. 1 hr. 23 min.
2. 28 lb. 8 oz.
3. 26 wk. 5 da.
4. 2 ft. 1 in.
5. 6 oz.
6. 1 ft. 2 in.
7. 3 mi.
8. 6 ft. 0 in.
9. 3 lb. 20 oz.
10. 3 hr. 58 min.

PROGRESS CHECK A

1. 1,460 qt.
2. 120 m.p.h.
3. 74 in.
4. $1.95

PROGRESS CHECK B

1. 730 lb.
2. 8 cartons
3. 12 yd.
4. 20 bags

ANSWERS - UNIT 7 MEASUREMENT (continued)

TOPIC G: METRIC DISTANCE

Sample Problems

a. 88.76 cm b. 31.66 mm c. 32.39 km d. 5.591 km

RAPID REVIEW

1. .063 km
2. 93.16 m
3. 1.71 km

PROGRESS CHECK A

1. metres, kilometres
2. a. 0.037 b. 100 c. 250,000 d. 130 e. 0.175 f. 0.2
3. a. 8.30 m b. 1.800 km
4. 86 mm
5. 0.5 m or 50 cm
6. 4.5 hours
7. 7 blocks

PROGRESS CHECK B

1. centimetres, metres
2. a. 0.028 m b. 200 cm c. 150,000 cm d. 150 mm
   e. 0.225 km f. 0.4 cm
3. a. 6.07 m b. 2.700 km
4. 81 mm
5. 4.2 m
6. 80 km/hr.
7. 660 cm or 6.6 m

TOPIC H: METRIC WEIGHT

Sample Problems

a. 610.3 mg b. 87.4 t c. 194.53 g d. 622.5 kg

RAPID REVIEW

1. 46,000 g
2. a. 140.5 mg b. 125.93 kg

ANSWERS - UNIT 7 MEASUREMENT (continued)

TOPIC H: METRIC WEIGHT

PROGRESS CHECK A

1. kilograms
2. a. 1000 g b. 0.2 t c. 0.375 kg d. 0.038 g
3. a. 11.015 g b. 1.300 mg
4. a. 4¢ b. 0.8¢
5. a. $1.08 b. 48¢
6. $37.50
7. $1.15 for 100 ml

PROGRESS CHECK B

1. grams, kilograms
2. a. 0.55 kg b. 2 t c. 2.7 g d. 25,000 mg
3. a. 6.910 kg b. 0.550 g
4. a. 3¢ b. 5¢
5. a. 52¢ b. $1.88
6. 26¢
7. $1.90 for 450 g

TOPIC I: METRIC LIQUID MEASURE

Sample Problems

a. 22.10 l b. 72.7 cl c. 372 ml d. 282.8 l

RAPID REVIEW

1. 123.6 kg
2. a. 784 t b. 318.47 kg

PROGRESS CHECK A

1. litres, millilitres
2. a. 1000 b. 250 c. 75 d. 0.25
3. a. 6.20 l b. 11.700 l
4. a. 1.5¢ b. 18¢ c. 1.4¢ d. .07¢ e. 3.5¢
5. a. 6.6 b. 5.5 c. 20 ml bottle

ANSWERS - UNIT 7 MEASUREMENT (continued)

TOPIC I: METRIC LIQUID MEASURE

PROGRESS CHECK B

1. centilitres, millilitres
2. a. 2.8 b. 2500 c. 50 d. 200
3. a. 8.10 l b. 0.400 l
4. a. 1.1¢ b. 38.8¢ c. 0.6¢ d. 1.3¢ e. 2.2¢
5. a. 0.08¢ b. 0.06¢

TOPIC J: METRIC WORD PROBLEMS

REQUIRED REVIEW

1. $10.40 2. 1,500 mails 3. 1 kg at $1.50
4. 10¢ 5. 1.5 km 6. 250 g
7. 5000cm 8. 250 cl 9. 16 l
10. 833 revolutions 11. 80 mg 12. 12 m
13. 20 cans 14. 21 cm 15. $1.95
16. 40 laps 17. 5:3 18. 511.2 l
19. 120,000 kg 20. 20 mm

PROGRESS CHECK A

1. 1095 liters
2. 2968.75 km
3. 150.9 cm
4. $2.54

PROGRESS CHECK B

1. 273.75 kg
2. 1600 cartons
3. 10 m
4. 160 bags

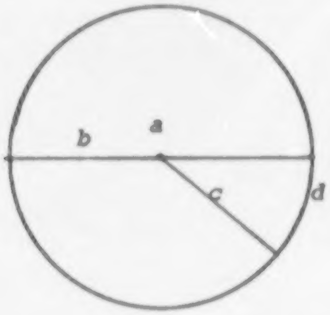
Unit VIII
Answer Key

Perimeter Area Volume
Figures & Forms

RAPID REVIEW

1. Figures are two dimensional / i.e. a square
   Forms are three dimensional/ i.e. a cube

2.



a)center
b)diameter
c)radius
d)circumference

PROGRESS CHECK A

1. (a) triangle (figure)   (d) cylinder (form)
   (b) cube (form)   (e) rectangle (figure)
   (c) cone (form)

2. (a) canned soft drink (cylinder)
   (b) a lump of sugar (cube)
   (c) a wheel rim (circle)
   (d) a dollar bill (rectangle)
   (e) a ball (sphere)

3. (a) square
   (b) cylinder

4. (a) circumference (b) diameter (c) radius (d) center

5. See Instructor
6. See Instructor

PROGRESS CHECK B

1. square, circle, triangle
2. (a) cube (b) rectangular solid (c) cylinder (d) rectangle
   (e) circle
3. (a) triangle (b) rectangular solid
4. (a) diameter (b) center (c) radius (d) circumference
5. See Instructor
6. See Instructor

Unit VIII
Answer Key

Perimeter & Circumference

RAPID REVIEW

1. (a) 30 in. (b) 20.8 yd (c) 175.84 ft. (d) 307.73 yd

PROGRESS CHECK A

1. length
2. cm
3. length of its outer boundary.
4. 99 cm
5. Formula: P = 45 Perimeter: 16 cm
6. Formula: P = 2L = 2W Perimeter 22 meters
7. outer boundary
8. circumference diameter
9. Formula C = D Perimeter 11
10. Cost $25.00

PROGRESS CHECK B

1. length
2. kilometers
3. the length of its outer boundary
4. 44 cm (approx.)
5. Formula P = 4s Perimeter 48 cm
6. Formula: P = 2L + 2 W Perimeter 28 cm
7. outer boundary
8. pi ( )
9. Formula C = 2 r Circumference: 44 cm
10. $204.00

Area

RAPID REVIEW

1. (a) 35 sq yd. (b) 27.85 sq. ft. (c) 78.5 sq in
   (d) 40 sq in. (e) 46.24 sq. in.

PROGRESS CHECK A

1. surface
2. square meters
3. 5 x 5 or 5 times 5
4. (a) 9 (b) 49 (c) 36
5. Formula: $A = S^2$ Area: $A = S^2 = 4^2 = 16$ sq. cm.
6. (a) 4 (b) 9
7. 8 cm
8. Formula: A = L x W Area: 602 sq. cm
9. Formula A = 1/2 bh Area: 3 sq m
10. Formula: $A = r^2$ Area 154 sq cm
11. $99.00

PROGRESS CHECK B

1. surface
2. square cm
3. a x a or a times a
4. (a) 64 (b) 121 (c) 36
5. $A = S^2$ 9 sq. m
6. (a) 6 (b) 12
7. 10 cm
8. Formula: $A = L \times W$ Area 105 sq. cm
9. Formula: $A = 1/2\ bh$ Area. 75 sq m
10. Formula: $A = \pi r^2$ Area 616 sq. cm.
11. $160.00

Volume

RAPID REVIEW

1. (a) 125 cu in. (b) 142.96 cu yd. (c) 452.16 cu ft.

PROGRESS CHECK A

1. cube cylinder
2. space enclosed by the given form
3. cu mm cc cu cm
4. Formula: $V = L \times W \times H$ Volume 60 cu cm
5. 2310 cv cm
6. 5.40 cv m of concrete are required

PROGRESS CHECK B

1. rectangular sphere
2. a measure of space enclosed by a given form
3. cv mm cu cm cc cu m
4. Formula $V = L \times W \times H$ Volume 36 cv meters
5. Formula $V = \pi r^2 h$ Volume: 282 6/7 cu cm
6. 400 cu meters

STATISTICS

Average

RAPID REVIEW

1. 59
2. 140 passengers
3. 624 fish

PROGRESS CHECK A

1. 261
2. 120
3. 43 kmph
4. $600.00

PROGRESS CHECK B

1. 46
2. $6300.
3. $128.75
4. 514 kmph

Line Graphs

RAPID REVIEW

1. (a) 70°, 80°, 85°
   (b) 55°, 9°
   (c) 85° 1°
   (d) increase, increase, decrease

PROGRESS CHECK A

1. (a) line graph (b) houses sold by salesman Wilson in April
   (c) houses sold-time (d) week 4 (e) week 2 (f) one
   (g) two
2. See Instructor

PROGRESS CHECK B

1. (a) line graph (b) Reading Speed Record-J. H. Wilson
   (c) reading speed, time (d) 230 wpm (e) 320 Wpm
   (f) 90 wpm (g) 9
2. See Instructor

Bar Graph

RAPID REVIEW

1. (a) 5, 1 (b) 8, 9, 18 (c) 2, 4, 5
   (d) 3, 6 (e) 6

PROGRESS CHECK A

1. (a) bar graph (b) number of new houses, time
   (c) fourth quarter (d) 50 (e) 1400 (f) second qtr.
2. See Instructor

PROGRESS CHECK B

1. (a) bar graphs (b) attendance, time (c) February 1975
   (d) March (e) No (f) February 1974
2. See Instructor

Circle Graph

RAPID REVIEW

1. $1800, $4500, $1350, $450, $900

PROGRESS CHECK A

1. (a) circle graph (b) grants (c) taxes & licenses
   (d) $900,000
2. See Instructor

PROGRESS CHECK B

1. (a) circle graph (b) member fees (c) $24.00
   (d) hall rental and annual ball
2. See Instructor

Unit X
Answer Key

Geometry

Lines

1. Teacher Judgement
2. Teacher Judgemtn

PROGRESS CHECK A

1. (a) vertical line (b) parallel lines (c) horizontal line
   (d) oblique line
2. See Instructor
3. See Instructor
4. See Instructor

PROGRESS CHECK B

1. (a) vertical line (b) oblique line (c) horizontal line
   (d) parallel lines
2. See Instructor
3. See Instructor
4. See Instructor

Angles

1. (a) obtuse (b) right (c) acute
2. (a) (b) (c)

PROGRESS CHECK A

1. b
2. degress 1/360
3. See Instructor
4. (a) 34° acute (b) 90° right (c) 134° obtuse
   (d) 215° reflex (e) 180° straight (f) 311° reflex
5. complementary
6. L3, L4, L5, L6

PROGRESS CHECK B

1. See Instructor
2. angles 1/360
3. 45°
4. (a) acute (b) straight (c) reflex (d) obtuse (e) right
5. See Instructor
6. supplementary
7. (a) 5 (b) 8

Geometry

Powers & Roots

1. (a) 9 (b) 25 (c) 64
2. (a) equilateral (b) isosceles (c) scalene

PROGRESS CHECK A

1. (a) isosceles (b) equilateral (c) scalene (d) right
2. See Instructor
3. shap and size
4. same in shape but different in size
5. yes
6. See Instructor
7. AC = 5

PROGESS CHECK B

1. (a) right (b) equilateral (c) scalene (d) isosceles
2. See Instructor
3. congruent
4. similar
5. similar
6. A = 8

Scale Drawing

1. Teacher Judgement
2. Teacher Judgement

PROGRESS CHECK A

1. similar
2. (a) read map (b) house plans
3. 2 m
4. 18 kilmetres
5. See Instructor

PROGRESS CHECK B

1. similar
2. road maps, house plans
3. 1.6 m
4. 7 cm 70 cm
5. See Instructor

XI. INTEGERS AND RATIONALS

A. Definitions and Notation

RAPID REVIEW
1. -5, 6, 3   2. 47, -8, -15¼, ½, -13   3. -74   4. 10.2

PROGRESS CHECK A
1.a. 8, 3 b. 15, 3 c. -3, -89 d. 5/8, -7½, 9.8, -5/9, -4
2.a. negative two b. positive one and one half
3.a. +4 b. -3½
4. -3
5. -5, -3/4, -1/2, 0, 2½

PROGRESS CHECK B
1.a. 3, 6 b. 8, 7 c. -5, -8 d. 2/5, -3/4, -7, -2.9, 9 3/8
2.a. positive five b. negative three quarters
3.a. -7 b. =13
4. +5
5. -7, -3/4, -1/3, 0, 5

B. Addition and Subtraction

RAPID REVIEW
1. -8   2. 8   3. -2   4. -18

PROGRESS CHECK A
1.a. +9 b. +15 c. 0 d. -22 e. -3 f. +3 g. 0 h. -5 i. -3 3/4
j. -7.5
2.a.-2 b. -11 c. +47 d. -18 e. 0 f. -11 g. -18 h. +20 i. 0
j. -7.5
3.a. 9 b. -6 c. 20
4. -21°

PROGRESS CHECK B
1.a. +7 b. -13 c. +33 d. -13 e. 0 f. +5 g. +8 h. -32 i. 0
j. +6½
2.a. +3 3/4 b. -7.4 c. +12 d. -38 e. ÷2 f. +10 g. -43
h. +12 i. +17½ j. -7.2
3.a. -1 b. -3 c. +16
4. 35°

C. Multiplication and Division

RAPID REVIEW
1. 432 2. -11¼ 3. 252 4. -9 5. 12 6. -8

PROGRESS CHECK A
1.a. 10 b. 18 c. -12 d. -27 e. 0 f. -14 g. -27 h. -5
i. -4.41 j. +49
2.a. -5 b. +8, c. 0 d. -1 e. -0.5 f. +2 g. +6 h. +3
i. -.42 j. -½
3.a. -3 b. +½ c. -10
4. -5°

PROGRESS CHECK B
1.a. 14 b. -27 c. -13 d. 0 e. 25 f. +12 g. -5 h. +26
i. -1.25 j. 21
2.a. +7 b. -1 c. 0 d. -1/3 e. -6 f. +3 g. -½ h. +9
i. -.56 j. -3 1/3
3.a. -1 b. -9 c. -1 d. -1/3 e. -6
4. 16°

XI. INTEGERS AND RATIONALS

D. Factoring

RAPID REVIEW

1. 2, 3, 7   2. 23, 29   3. 4   4. 72

PROGRESS CHECK A

1.a. 3x2 or 6x1 b. 3x3 or 9x1
2. factors
3. a number whose only factors are itself and 1
4.a. 2x3x7 b. 2x11x13 c. 2x5x5 d. 2x2x2x5x5x5
5. 8
6. 60

PROGRESS CHECK B

1.a. 2x2 or 4x1 b. 3x5 or 15x1
2. factors
3. a number whose only factors are itself and 1
4.a. 2x2x3x3 b. 7x2x2x3 c. 3x3x3x2 d. 2x2x2x3x3x3
5. 6
6. 72

UNIT: I WHOLE NUMBERS

TOPIC A READING,WRITING & ROUNDING-OFF		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B ADDITION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C SUBTRACTION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: WHOLE NUMBERS

TOPIC D MULTIPLICATION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC E DIVISION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC F WORD PROBLEMS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: II FRACTIONS

TOPIC A READING & WRITING		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B ADDITION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C SUBTRACTION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: II FRACTIONS

TOPIC D MULTIPLICATION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC E DIVISION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC F PROBLEM SOLVING		
OBJ.	WORK TO DO:	RESULTS:
		PROGRFSS CHECK A:
		PROGRESS CHECK B:

UNIT: III RATIO & PROPORTION

TOPIC A READING & WRITING		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B OPERATIONS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C PROBLEM SOLVING		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: IV DECIMALS

TOPIC A READING, WRITING & ROUNDING-OFF		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B ADDITION & SUBTRACTION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C MULTIPLICATION & DIVISION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRFSS CHECK A:
		PROGRESS CHECK B:

UNIT: IV DECIMALS

TOPIC D EQUIVALENTS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC E MONEY SYSTEM		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC F WORD PROBLEMS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: V PERCENT

TOPIC A READING,WRITING & ROUNDING-OFF

OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B OPERATIONS

OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C COMPUTATION REVIEW

OBJ.	WORK TO DO:	RESULTS:
		PROGRFSS CHECK A:
		PROGRESS CHECK B:

UNIT: VI CONSUMER MATH

TOPIC A CHECKING ACCOUNT		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B SAVINGS ACCOUNT		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C MAIL ORDER BUYING		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: VI CONSUMER MATH

TOPIC D BUDGETING		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC E INCOME TAX		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC F SOCIAL SECURITY		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: VI CONSUMER MATH

TOPIC G STOCKS & BONDS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: VII MEASUREMENT

TOPIC A TIME		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B DISTANCE		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C LIQUID		
OBJ.	WORK TO DO:	RESULTS:
		PROGRFSS CHECK A:
		PROGRESS CHECK B:

UNIT: VII MEASUREMENT

TOPIC D WEIGHT		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC E OPERATIONS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC F WORD PROBLEMS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: VII MEASUREMENT

TOPIC G METRIC DISTANCE		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC H METRIC WEIGHT		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC I METRIC LIQUID MEASURE		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: VII MEASUREMENT

TOPIC J METRIC WORD PROBLEMS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: VIII PERIMETER, AREA, VOLUME

TOPIC A FIGURES & FORMS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B PERIMETER & CIRCUMFERENCE		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C AREA		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: VIII PERIMETER, AREA, VOLUME

TOPIC D VOLUME		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: IX STATISTICS

TOPIC A AVERAGE		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B LINE GRAPHS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C BAR GRAPHS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: IX STATISTICS

TOPIC D CIRCLE GRAPHS		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: X GEOMETRY

TOPIC A LINES		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B ANGLES		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C POWERS & ROOTS/TRIANGLES		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: X GEOMETRY

TOPIC D SCALE		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC		
OBJ.	WORK TO DO:	RESULTS:
		PROGRFSS CHECK A:
		PROGRESS CHECK B:

UNIT: X INTEGERS & RATIONALS

TOPIC D FACTORING

OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC

OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC

OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

UNIT: XI INTEGERS & RATIONALS

TOPIC A DEFINITIONS & NOTATION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC B ADDITION & SUBTRACTION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B:

TOPIC C MULTIPLICATION & DIVISION		
OBJ.	WORK TO DO:	RESULTS:
		PROGRESS CHECK A:
		PROGRESS CHECK B: